峨眉植物圖誌

黄季陸

ICONES PLANTARUM OMEIENSIUM

Volume 2 Number 1

英國愛丁堡大學博士
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Preliminary Notes on Chinese Aceraceae. Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 143-189, 1. fig.

2. 中國槭樹科再誌（載中國科學社論文集第八卷第二號一百六十二至一百八十二頁附圖七及八）
Further Notes on Chinese Aceraceae. Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VIII (1932), 162-182, fig. 7, 8.

3. 四川槭樹一新種（載中國科學論文集第九卷二百三十五至二百三十七頁附圖二十二）
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The first number of the second volume of this Icones is respectfully dedicated to

Professor **WOON-YOUNG CHUN**, M.S. 陳煥鏞教授
the founder of the Botanical Institute of the National Sun Yatsen University, Canton, for his valuable contributions to the enrichment of our knowledge of the flora of southern China, and unceasing devotion to botanical investigations for over twenty-five years.

方文培 敬贈
With the Compliments of
Dr. Wen-Pei Fang.

ICONES PLANTARUM OMEIENSIUM.

Volume 2 *Number 1*

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Plate 101.

STACHYURUS CHINENSIS Franchet.

Stachyuraceae.

Stachyurus chinensis, Franchet in Journ. de Bot. XII (1898), 254.—Diels in Engler, Bot. Jahrb. XXIX (1900), 475.—Rehder in Sargent, Pl. Wilson. I (1913), 287.—Rehder, Man. Cult. Trees & Shrubs, (1927), 641.

Stachyurus praecox, Diels (non Siebold et Zuccarini) in Engler Bot. Jahrb. XXIX (1900), 475.

Shrub 2 rarely 3 metres high; bark smooth, purplish-brown or dark brown; branchlets stout, glabrous, reddish-purple or greenish-brown. Leaves developing after the opening of flowers, alternate, chartaceous, obovate or elliptical, 7-12 cm. long, 4-7 cm. broad, acute or rounded at the apex with a caudate acumen, 2 cm. in length, subrotund or broadly cuneate at the base, serrate on the margin with appressed crenulate teeth, upper surface bright green, midrib and 7-9 pairs of lateral nerves slightly impressed, lower surface pale green, with prominent midrib and slightly raised lateral nerves; petioles 1.5-2.5 cm. long, purple, glabrous. Flowers numerous (usually 15 to 20) in pendulous racemes 4-6 cm. long, from the axilla of leafless branchlets; bracts 2, triangular; sepal greenish-yellow, ovate, 2 mm. long; petals 4, yellow, obovate, 7 mm. long; stamens 8, slender, 6 mm. long, anthers yellow, 2-celled; pistil nearly as long as the petals, ovary superior, ovoid, style glabrous, stigma capitate or slightly lobed. Fruit an ellipsoid berry, 6 mm. in diameter, on pedicel 3 mm. long.

MOUNT OMEI: Pao-ku, alt. 1300 m., shrub 3 metres high, flowers yellowish-green, *W. P. Fang*, No. *16141*, April 12, 1941; Chiu-lao-tung, alt. 1800 m., shrub 2 metres high, flowers in buds, *T. C. Lee*, No. *4454*, March 1940; Hua-yen-ting, alt. 2096 m., in forests, shrub 2 metres high, bark greyish brown, leaves green above and light green below, *C. L. Sun*, No. *2550*, June 22, 1940; Hsi-hsiang-chih, alt. 2110 m., *S. S. Chien*, No. *6093*, July 13, 1937; same locality, in thickets, small tree 5 metres high, flowers yellow, common, *W. P. Fang*, No. 16007, April 1, 1941; Tsuan-tien-po, alt. 2100 m., shrub 3 metres high, flower greenish-yellow, *T. C. Lee*, No. *4467*, March 1940.

SIKANG: Pao-hsing-hsien, alt. 3100 m., *K. L. Chu*, No. *3252*, July, 1936.

Distribution: Honan, Shensi, Kiangsi, Hupeh, Szechuan, Sikang, Yunnan and Fukien.

This species is very rare at Mount Omei. It differs from *Stachyurus himalaicus* Hooker f. et Thomson in its obovate or elliptical leaves which are crenate on the margin and caudate acuminate at the apex and in its short inflorescence, which consists of 15 to 20 flowers. . . . . W. P. Fang

Fig. 1, a flowering branch (natural size).

2, a fruiting branch (natural size).

3, a flower (enlarged 5 times).

4, a fruit (enlarged 3 times).

圖版一百零一

中國旌節花

旌節花科

灌木高二公尺稀三公尺；樹皮光滑，紫褐色或深褐色；幼枝粗壯，無毛，紅紫色或綠褐色。葉於花開後發出，互生，紙質，倒卵形或橢圓形，長七至十二公分，寬四至七公分，頂部銳尖或圓形而有長二公分之尾狀尖端，基部稍圓或爲闊楔形，邊緣具有密接之鈍鋸齒，表面亮綠色，中脈及七至九對之側脈微凹下，葉背面灰綠色．有突出之中脈及微凸之側脈；葉柄長一公分半至二公分半，紫色，無毛。花多（常爲十五至二十枚）生於長四至六公分之下垂總狀花序上，由無葉小枝之腋間發出；苞片二，三角形；萼片黃綠色，卵形，長二公厘；花瓣四，黃色，倒卵形，長七公厘；小蕊八本，纖細，長六公厘，花藥黃色，二室；大蕊幾與花瓣等長，子房上位，卵圓形，花柱光滑無毛，柱頭頭狀或稍成裂片。果爲橢圓形之漿果，直徑六公厘，果柄長三公厘。

產於峨眉山九老洞，鑽天坡，洗象池等處，海拔一千三百公尺至二千一百一十公尺之叢林中。

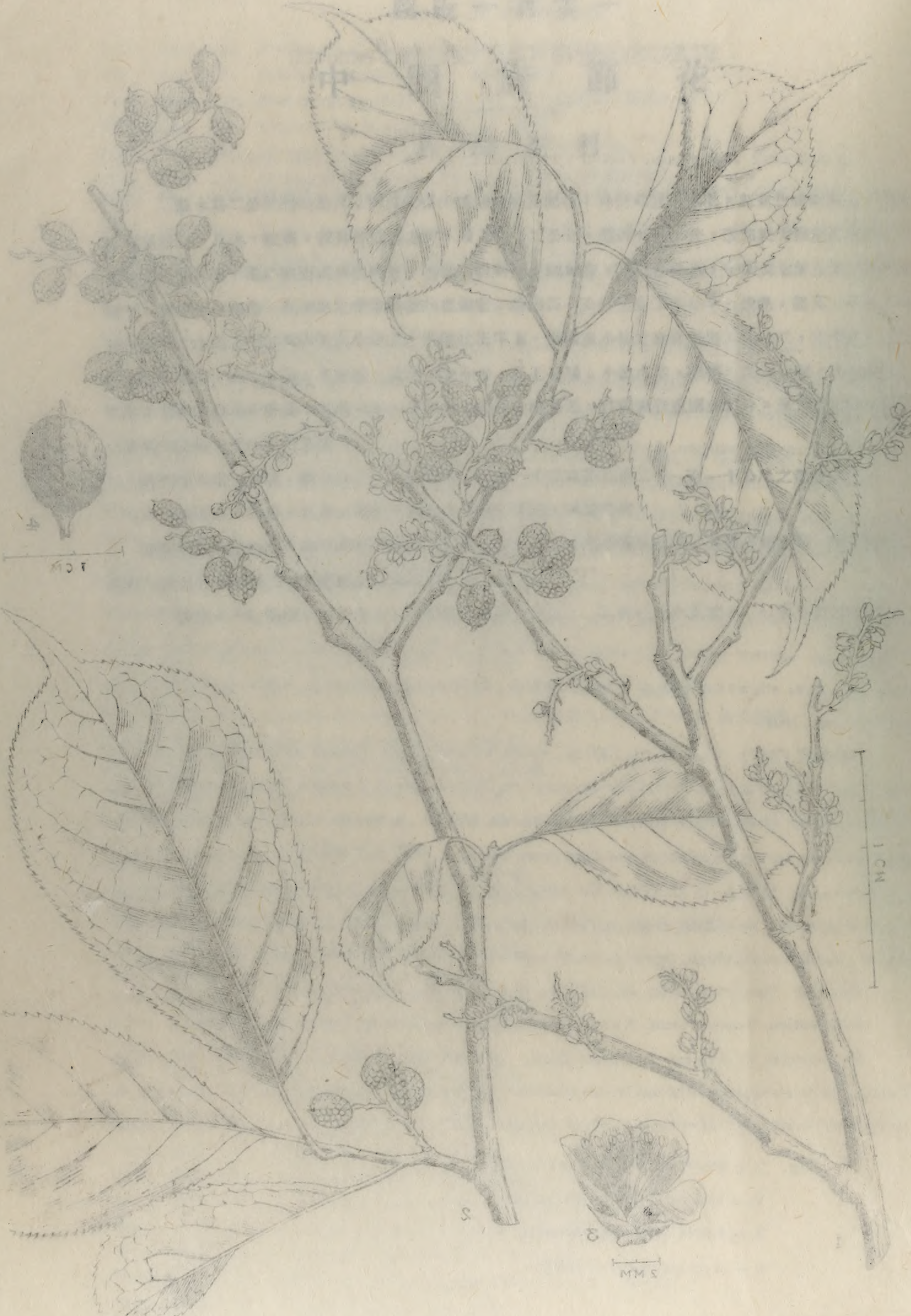
分佈於河南，陝西，江西，湖北，四川，西康，雲南，福建等省。

此種在峨眉山極少，其不同於西域旌節花者，在其倒卵形或橢圓形之葉，邊緣有鈍鋸齒，頂部有尾狀尖端，以及具十五至二十花所組成之短花序。

圖解：1.花枝（原大）；2.果枝（原大）；3.花（放大五倍）4.果（放大三倍）



101. STACHYURUS CHINENSIS Franchet



101. STACHYURUS CHINENSIS Franchet

Plate 102.

STACHYURUS RETUSUS Yang.

Stachyuraceae.

Stachyurus retusus Yang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XII, No. 2 (1939). 105, fig. 6.

Shrub 3 metres high; bark dark-brown, smooth; branchlets slender, terete, those of the current year green, glabrous, those of more than one-year old greyish-brown or dark brown, with sparse ovate lenticels. Winter-buds axillary, ovoid or elongated, scales 5-6, ovate, acute or acuminate, glabrous or rarely puberulous on the outer surface near the apex. Leaves alternate, chartaceous or subcoriaceous, orbicular or suborbicular rarely obovate, 7-9 cm. long, 4-8 cm. broad, retuse or rarely truncate at the apex, revolute and sparsely serrate with crenate-teeth on the margin, upper surface shining green, glabrous, lower surface whitish-tomentose, usually less so when matured, midrib conspicuous above, prominent below, lateral veins 5-7 pairs, curved, conspicuous on both surfaces; petioles 1.5-2.8 cm. long, grooved above, rounded below, purplish-green, glabrous. Flowers not fully open yet, in axillary pendulous racemes 2 cm. long, sepals 4, greenish, petals 4, whitish, stamens 8, ovary superior, ellipsoid, glabrous, style short with 4-lobed stigmas. Fruit a ellipsoid berry, 5 mm. in diameter, usually several in a short fruiting raceme 3 cm. in length; pedicels 2-3 mm. long.

MOUNT OMEI: near Chiu-lao-tung, alt. 1800 m., shrub about 3 metres high, branchlets purplish green, leaves oblong-orbicular, light green, glabrous with reddish veins above, light green and white tomentose beneath, mostly notched at the apex, cordate at the base, serrate and reflexed on the margin, young fruits obovoid, dark green, pubescent at the base, 9 mm. long, 7 mm. in diameter, with a short pedicel and short persistent style, in a short compact fruiting raceme, *W. C. Cheng*, No. *10439*, May 27, 1940; Hsi-hsiang-chih, alt, 2000 m., *W. C. Cheng*, No. *6818*, October 1936 (ex Dr. Cheng); Chin-ting, alt. 3135 m , *H. C. Chow*, No. *7674*, June 27, 1938; without precise locality, shrub 3 metres high, leaves suborbicular, *C. W. Yao*, No. *3365* (type), October 1938; without precise locality, shrub 1-2 metres high, branchlets yellowish-green, leaves orbicular in outline, subcordate at the base, the apex of the leaves variable, some notched or rounded and cuspidate at the apex, compressed serrate at the margin, bluish-green above with elvated veins, densely pubescent or tomentose below, petioles 1 cm. long, dull purple in colour. *W. C. Cheng*, No. *10351*, May 13, 1930 (ex Dr. Cheng, we have no specimens in our herbarium).

Distribution : Endemic.

This well-marked species is easily detinguished from all the known species by the orbicular or suborbicular leaves which are emarginate on the apex and whitish-tomentose on the lower surface ....,...............W. P. Fang.

Fig. a fruiting and leafy branch (natural size).

圖版一百零二

凹葉旌節花

旌節花科

灌木高三公尺；樹皮黑褐色而平滑；小枝細圓，當年生小枝綠色，光滑無毛，多年生枝灰褐色或深褐色，具有稀疏之卵形皮孔。冬芽腋生，卵圓形或長形，鱗片五至六，卵形，銳尖或漸尖，近頂端之下面光滑或有少許之絨毛。葉互生，紙質或近於革質，扁圓形或稍扁圓，稀爲倒卵圓形，長七至九公分，寬四至八公分，先端成凹形，稀爲截形者，葉緣反捲，具稀疏之鋸齒，表面亮綠，光滑無毛，背面被淺色細絨毛，已長成之葉背面之毛較少，中脈在葉表面顯明，在葉背面則突出，側脈五至七對，微曲，在葉兩面皆顯明；葉柄長一公分半至二公分半，上面有溝，下面渾圓，紫綠色，光滑無毛。花尚未充分開放，成腋生下垂長二公分之總狀花序，萼片四枚，淡綠色，花瓣四枚，淡白色，小蕊八本，子房上位，橢圓形，光滑無毛，花柱短，具四裂之柱頭。果爲漿果，橢圓形，直徑五公厘，常僅數枚生於長三公分之總狀果穗上，果梗長二至三公厘。

產峨眉山九老洞，洗象池，金頂等處，海拔由一千八百公尺至三千一百三十公尺左右之叢林中。

本種因其葉形扁圓，先端凹缺，葉背面有淡白色細絨毛，易與其他各種區別。

圖解：着果及葉之枝（原大）。



102. *Stachyurus retusus* Yang



Plate 103.

STACHYURUS SZECHUANENSIS Fang.

Stachyuraceae.

Stachyurus szechuanensis Fang, spec. nov.

Arbor parva 5 m. alta; cortex niger-fusus. Ramuli graciles, rotundi, glabri; hornotini viridi; annotini et annosiores nigris dipisti coloribus. Gemmae axillarae conoideae, perulis 4-5, crassis, ovatis, acuminatis abrupte, glabris. Folia alternata, coriacea, obovata vel oblongo-obovata, 4-8 cm. longa, 2.5-4.5 cm. lata, apice subrotundata vel obtusa, basi late cuneata vel cuneata simpliciter, margine revoluta et serrata appressa; extrinsecus profunde viridia et glabra; intrinsecus pallide viridia vel purpureo-viridia, glaucentia, costa media supra conspicua. subtus prominente; nervis utrinsecus 5-7, supra obsoletis, subtus conspicuis. Petioli 8-20 mm. longi, glacili. glabri, supra canaliculati, subtus rotundati. Flores ignoti. Fructus ovoidei; baccae 6 mm. diametro, 3-5 in racemoso brevi pendulo 2 cm. longo; pedicelli 2 mm. longi.

Small tree 5 metres high; bark dark brown, smooth; branchlets slender, terete, glabrous, those of the current year green and those more than one year old tinged black. Winter-buds axillary, conical, scales 4-5, thick, ovate, abruptly acuminate, glabrous. Leaves alternate, coriaceous, obovate or oblong-obovate, 4-8 cm. long, 2.5-5.5 cm. broad, subrotund or obtuse on the apex; broadly cuneate or cuneate at the base, revolute and serrate with apressed sharp teeth on the margin, uppear surface deep green, glabrous, lower surface pale green or purplish-green, glaucescent, midrib conspicuous above, prominent below, lateral nerves 5-7, obsolete above, conspicuous below; petioles 8-20 mm. long, slender, glabrous, grooved above, rounded below. Flowers unknown. Fruits ovoid berries 6 mm. in diameter. 3-5 in a short pendulous raceme 2 cm. in length; pedicels 2 mm. long.

MOUNT OMEI: northwest of Mount Omei, Yun-king-hsien, Wa-wu-shan, *C. Y. Yao*, No. *3744*, July 1939; same locality, near Hsi-tien-chih, in forests, small tree 5 metres high, bark dark-brown, fruits green, *C. L. Sun*, No. *1230* (type), September 5, 1939; Mount Omei, without precise locality, shrub with shoots green while young, becoming yellowish-green in the second year, petioles grooved above, leaves bluish-green and with elevated veins above, midrib red toward the base on the upper surface, glaucescent below, margin recurved, crenate-serrate, fruits obovoid, about 6 mm. a cross *W. C. Cheng*, No. *10389*, May 14, 1940 (according to Dr. Cheng, we have not found specimen in our herbarium.)

It is very interesting to have this new species described from the plants of Mount Omei and its vicinity. This new species in near *Stachyurus retusus* Yang but differs from that species in having, obovate leaves which are pale green and glaucescent but not pubescent on the lower surface. The fruiting inflorescences are a littles horter than those of......*Stachyurus retusus* Yang.

Fig. a leafy and fruiting branch (natural size).

As Mount Omei seems to be the centre of distribution of the Chinese species of this genus which seven species grow on this mountain and two of them are endemic to this region. It seems desirable to make a key to all the Chinese species of this genus as follows :

A. Leaves evergeen, coriaceous or subcoriaceous; flowers with the leaves.
  B. Leaves lanceolate or linear-lanceolate.
    C. Leaves linear-lanceolate..............................*Stachyurus salicifolius* Fr.
    CC. Leaves lanceolate or oblanceolate...............*Stachyurus yunnanensis* Fr.
  BB. Leave obovate...*Stachyurus obovatus* Cheng.
AA. Leaves deciduous, chartaceous; flowers before the leaves:
  B. Leaves ovate to oblong-ovate or elliptic.
    C. Shrub to 4 metres high; leaves elliptic-ovate to ovate-lanceolate, 7-14 cm. long, acuminate at apex, rounded at base, serrate with slightly spreading teeth, racemose inflorescences 5-8 cm. long, not branched...........*Stachyurus praecox* S. & Z.
    CC. Shrub, 2-3 metres high; leaves ovate or oblong-ovate, 6-12 cm. long, long-acuminate at apex, rounded or subcordate at base, crenate-serrate; racemose inflorescence 4-6 cm. long, usually branched..........................*Stachyurus chinensis* Fr.
    CCC. Small tree; leaves oblong-ovate, 10-15 cm. long, acuminate at apex, rounded at base serrulate with appressed sharp teeth; inflorescence 8-11 cm. long, not branched.......... ....*Stachyurus himalaicus* Hooker f. & Thomson.
  BB. Leaves orbicular, revolute and sparsely serrate on the margin, whitish-tomentose at the lower surface..*Stachyurus retusus* Yang.
  BBB. Leaves obovate, revolute and sharply serrate on the margin, glaucescent at the lower surface...*Stachyurus szechuanensis* Fang.

圖版一百零三

四川旌節花 新種

旌節花科

小喬木高五公尺；樹皮深褐色，光滑；小枝細圓無毛，當年之枝綠色，多年之枝微現綠色。冬芽腋生，圓錐形，鱗片四至五枚，質厚，卵形，陡尖，無毛。葉互生，革質，倒卵形或長圓倒卵形，長四至八公分，寬二公分半至五公分半，先端微圓或鈍形，基部楔形或寬楔形，邊緣常反捲而具密接齒尖銳之鋸齒，葉表面深綠色，無毛，葉背面灰綠色，紫綠色或藍灰色，中脈在葉表面顯明，在背面突出，側脈五至七，表面不顯，背面顯著：葉柄纖細，長八至二十公厘，無毛，上面有溝紋，下面渾圓。花之特性不明。果爲卵圓形之漿果，直徑六公厘，僅三至五枚生於長二公分短而下垂之總狀花序上；果梗長二公厘。

此種產於峨眉山及峨眉山西北之滎經縣瓦屋山下天池。

此新種與凹葉旌節花極相近，其區別在此種具倒卵形之葉，葉之背面係藍灰色且不具絨毛，果序亦較凹葉旌節花爲短。

圖解：着葉與果之枝（原大）。

峨眉山爲旌節花屬分佈之中心，斯山共產七種且其中有二種之產地限於此區。茲爲研究方便起見，特附此屬各種之檢索表如下：

甲．葉常綠，革質或亞革質；花與葉同時生長。

　乙．葉披針形或線狀披針形。

　　丙．葉線狀披針形……………………………………………………………………柳葉旌節花。

　　丙丙．葉披針形或倒披針形…………………………………………………………雲南旌節花。

　乙乙．葉倒卵形……………………………………………………………………………卵葉旌節花。

甲甲．葉冬季凋落，紙質；花於發葉之前開放。

　乙．葉卵形，長方卵形或橢圓形。

　　丙．灌木高四公尺；葉橢圓卵形或卵狀披針形，長七至十四公分，先端尖銳，基部圓形，邊緣具略外伸之鋸齒；總狀花序長四至六公分，常不分枝。…………………………………………………………………旌節花。

　　丙丙．灌木高二至三公尺；葉卵形或長方卵形，長六至十二公分，先端尖銳具長尖，基部圓形或亞心臟形，邊緣具鈍鋸齒；總狀花序長四至六公分，常分枝。…………………………………………………………………中國旌節花。

　　丙丙丙．小喬木；葉長方卵形，長十至十五公分，先端尖銳，基部圓形，邊緣具密接之尖銳小鋸齒；總狀花序長八至十一公分，不分枝。…………西域旌節花。

　乙乙．葉圓形，邊緣具反捲之疎鋸齒，背面具淺白色之柔毛。……………凹葉旌節花。

　乙乙乙．葉倒卵形，邊緣具反捲之銳鋸齒，背面微具白粉。………………四川旌節花。



103. *Stachyurus szechuanensis* Fang

Plate 104.

LIQUIDAMBAR FORMOSANA Hance.

Hamamelidaceae.

Liquidambar formosana Hance in Ann. Sci. Nat. ser. 5, V (1866), 215; in Journ. Bot. V (1867), 110; VIII (1870), 274.- Oliver in Hooker Icon. Pl. XI, 14 (1867-1871), t. 1020.- Hemsley in Journ. Linn. Soc. XXIIII (887), 291.. Diels in Engler, Bot. Jahrb. XXIX (1900), 379.- Pampanini in Nuov. Giorn. Bot. Ital. n.ser. XVII (1910) 288.- Dunn et Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 101.- Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 421.- Rehder in Journ. Arn. Arb. V (1924), 167.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 2 (1931), 238.

Liquidambar acerifolia Maximowicz in Bull. Acad. Sci. St. Petersb. X (1866), 486.

Liquidambar sp. Hemsley in Journ. Bot. XIV (1876), 207.

Liquidambar Maximowiczii Miquel in Ann. Mus. Lugd.-Bat. III (1877), 200- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884-18885), 167.

Liquidambar formosana var. Hemsley in Journ. Linn. Soc. XXIII (1887), 291.

Deciduous tree usually 20 metres, rarely up to 40 metres, high, 1 metre in diameter, trunk straight, crown broadly ovate; bark grey and smooth while young, then changing to brown and rough when matured; branchlets terete, grey, glabrous, with conspicuous, ovate lenticels; winter-buds terminal or axillary, ovoid or conical-ovoid, 6-8 mm. long, 3-5 mm. in diameter, scales ovate, imbricate, brown or dark brown, yellowish-pubescent outside and ciliate on the margin. Leaves alternate, mostly from the current-year branchlets, coriaceous, usually 3-lobed, 9-10 cm. long, 10-12 cm. broad, cordate or truncate at base, lobes triangular-ovate, acuminate on the apex, serrate on the margin with appressed acute teeth, upper surface deep green, sparsely pubescent while young and then changing to glabrescent, lower surface pale green, densely pubescent while young and glabrescent when old except which remain pubescent on the veins, the colour of the whole leaf changing to red or deep brown in the autumn, main veins conspicuous above, prominent below, secondary veins reticulate; petioles cylindrical, slender, 5-8 cm. long, sparsely pubescent while young and then changing to glabrous; stipules caducous, linear, 15 mm. long, pilose above, glabrous below. Flowers unisexual, monoecious, apetalous, staminate flowers in a yellow-pubescent raceme 3-4 cm. long, terminal on short current year branchlets, stamens numerous, 2 mm. long, anthers purple, subglobose, 2-celled, filaments slender, glabrous, pedicels slender, 3 mm. long; pistillate flowers in globose heads from the axil of leaf on the current-year branchlets, ovary subinferior, 2-celled, styles 2, usually 10-12 mm. long, pubescent, stigmas subglobose, incurved, with rudimentary stamens and pubescen, subulate bracts, 6-8 mm. long, peduncles 5 cm. long, pubescent. Fruit pendulous, globose, consisting of capsules, 3 cm. in diameter, with pubescent sharp spines, developed from the pubescent styles, and subulate bracts, seeds 1-2, flat and winged.

MOUNT OMEI: near Omei-hsien, *T. H. Tu*, No. *877*, in 1935; Yuan-tung-ssu, alt. 470 m., at roadside, tree 20 metres high, young fruits aggregated capsules, *W. P. Fang*, No. *14029*, April 6t 1940; Wan-kan, alt. 450 m., tree 20 metres high, flowers brownish, *C. L. Chow*, No. *5544*, March 16, 1942; Fu-hu-ssu, alt. 500 m., in forests, tree 30 metres high, fruits with spiny appendages, *W. P. Fang*, No. *15486*, November 20, 1940.

CHEKIANG: Sui-chang-hsien, *K. Ling*, No. *2848*, August 14, 1929.

KIANGSU: near Nanking, *S. Chen*, No. *4458*, May 20, 1935.

Distribution: Honan, Chekiang, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Kweichow, Formosa and Kwangtung. . . . . W. P. Fang.

This species is fairly common at the base of Mount Omei and attracts the attention of visitors because of its beautiful red leaves in the autumn.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, a pistillate flower (enlarged 10 times); 5, a longitudinal section of the ovary (enlarged 5 times); 6, a capsule (enlarged 4 times); 7, a seed (enlarged 5 times).

圖版一百零四

楓樹

金縷梅科

落葉喬木高常二十公尺，稀達四十公尺，直徑一公尺，幹直，樹冠闊卵圓形，樹皮嫩時灰色而光滑，老則變爲褐色而粗糙；小枝圓形，灰色，無毛，具顯明之卵形皮孔；冬芽頂生或腋生，卵圓形或圓錐狀卵圓形，長六至八公厘，直徑三至五公厘，芽鱗卵形，覆瓦狀排列，褐色或深褐色，外被黃色絨毛，邊緣具纖毛。葉互生，常由當年之小枝發出，革質，常具三裂片，長九至十公分，闊十至十二公分，基部心臟形或截形，裂片爲三角狀卵形，先端漸尖，邊緣具密接之尖鋸齒，表面深綠色，幼時有稀疏之絨毛，後漸變爲無毛，背面淡綠色，幼時有濃厚之絨毛，老時則近於光滑無毛，間有仍存留絨毛者，全葉在秋天變爲紅色或深褐色，主脈在葉表面顯明，在葉背面突出，細脈成網狀；葉柄圓柱形而纖細，長五至八公分，幼時被稀疏之絨毛，老時則無；托葉早落，綫形，長十五公厘，表面有毛，背面無毛。花單性，大小蕊花同株，無花瓣，小蕊花生於長三至四公分且被有黃色絨毛之總狀花序，頂生於本年生之短小枝上，小蕊多數，長二公厘，花藥紫色，亞圓形，二室，花絲細小，無毛，小花梗纖細，長三公厘；大蕊花成球形之頭狀花序，由本年生小枝之葉腋間生出，子房稍下位，二室，花柱二枚，常長十至十二公厘，具絨毛，柱頭略呈球形，向內曲，有不發育之小蕊，及長六至八公厘具絨之鱗形苞片，花梗長五公分，具絨毛。果實爲下垂之球形蒴果，直徑三公厘，具有被絨毛之尖刺，由被絨毛之花柱及鱗形苞片發育而成，種子一至二枚，形平扁且具翅。

本種產於峨眉山籠伏虎寺，圓通寺等四五百公尺之林中或路旁。因其在秋天有美麗之紅葉，故常引起遊人之注意。

本種分佈於河南，浙江，江蘇，安徽，江西，湖北，四川，西康，湖南，貴州，台灣及廣東等省。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大五倍）；4. 大蕊花（放大十倍）；5. 子房縱剖面（放大五倍）；6. 蒴果（放大四倍）；7. 種子（放大五倍）。



104. *Liquidambar formosa* Hance

Plate 105.

LOROPETALUM CHINENSE (R. Brown) Oliver.

Hamamelidaceae.

Loropetalum chinense (R. Brown) Oliver in Trans. Linn. Soc. XXIII (1862), 458, fig. 4 - Moore in Journ. Bot. XVI (1878), 138.- Hance Journ. Bot. XVI 1878), 226.- Maximowicz in Bull Soc. Nat. Mosc. LIV, pt. 1 (1879), 22.- Hemsley in Journ. Linn. Soc. XXIII (1887), 290; in Bot. Mag. CXXX (1904), t. 7979.- Diels in Engler, Bot. Jahrb. XXIX (1900) 381.- Dunn et Tutcher in Kew Bull. Misc. Inform. Add. ser. X (1912), 101 (Fl. Kwangtung & Hongkong).- Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 430.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 2 (1931), 240.

Hamamelis chinensis R. Brown in Abel, Narr. Journ. China, (1818), 375, fig.

Evergreen shrub 1 to 2 metres high, bark dark brown, smooth; branchlets slender, terete, those of the current year densely yellow-pubescent with stellate hairs, those more than one year old purplish or dark brown, slightly pubescent; buds not seen. Leaves alternate, coriaceous, ovate or obovate, 2-2.8 cm. long, 1.5-2 cm. broad, subrotund and subequal at the base, acute at the apex, entire on the margin, upper surface deep green and sparsely pubescent or glabrescent, lower surface yellowish green and sparsely pubescent with stellate hairs, midrib and 4 pairs of primary veins conspicuous above, prominent below; petioles terete, 5 mm. long, densely yellow-pubescent; stipules membraneous, caducous. Flowers 4 to 8 in a globose head terminal on branchlets, calyx-tube densely stellate pubescent, adnate to the half-inferior ovary, 4-lobed at its upper part, petals 4, linear-lanceolate, 1.5-2 cm. long, 2 mm. broad, yellowish-white, stamens 4, adnate to the lower part of ovary, filaments short, anthers 4-celled, connectives prolonged and curved, ovary with 4 small scales, 2-celled, styles 2, distinct and spreading, ovules 1 in each cell, pendulous. Fruit an ovoid capsule, densely yellowish stellate pubescent, 7 mm. in diameter, inner husk hard, bony, seeds subrotund, flat.

MOUNT OMEI: near Fu-hu-ssu, under forests, shrub ½ metre high, flowers white, *W. P. Fang*, without number, April 1940.

CHEKIANG: Tien-mu-shan, *T. N. Liou*, No. *21*, in 1930.

SZECHUAN: Nanchuan-hsien, shrub with yellow flowers, *H. F. Chang*, No. *47*, April 12, 1930; same locality, *H. C. Yang*, No. *3013*, April 1939.

KWANGSI: without precise locality, *C. Wang*, No. *39610;* without precise locality, *Z. S. Chung*, No. *81761*.

This species is commonly found growing at the side of or under the pine forests at the foot of Mount Omei. . . . . . W. P. Fang.

Distribution: Shantung, Chekiang, Kiangsu, Kiangsi, Hupeh, Szechuan, Hunan, Kweichow, Yunnan, Fukien, Kwangtung and Kwangsi.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 4 timesd); 4, a flower dissected to show the ovary and scales (enlarged 6 times); 5, a stamen (enlarged 2 times); 6, a capsule (enlarged 4 times); 7, a seed (enlarged 2 times); 8, a portion of young leaf to show the stellate hairs at the upper surface (enlarged 5 times); 9, a portion of leaf to show the stellate hairs at the lower surface (enlarged 5 times).

圖版一百零五

檵木

金縷梅科

常綠灌木，高一至二公尺，樹皮灰褐色而光滑；小枝纖細，圓形，本年生之嫩枝具星芒狀之黃色絨毛，多年生之枝淡紫色或暗褐色，微被毛；芽尚未見。葉互生，革質，卵形或倒卵形，長二至二公分八公厘，寬一公分半至二公分，基部亞圓形，先端尖銳，全緣，表面深綠色，被稀疏之絨毛或稍光滑，背面黃綠色，被稀疏之星形絨毛，中脈及四對側脈在葉表面顯明，在葉背面突出；葉柄圓形，長五公厘，被濃密之黃色絨毛；托葉膜質，早落。花四至八枚成球形之頭狀花序，頂生於小枝上，萼管被濃密之星芒狀絨毛，附着於半下位之子房上，上部四裂，花瓣四枚，線狀披針形，長一公分半至二公分，寬二公厘，黃白色，小蕊四本，着生於子房下部，花絲短，花藥四室，藥隔伸長而彎曲，子房有四小鱗片，二室，花柱二，向外伸展，每室一胚珠，下垂。果爲一卵圓形之蒴果，被濃密之黃色星狀絨毛，直徑七公厘，內壳堅硬，骨質，種子亞圓形而扁平。

本種生於峨眉山麓伏虎寺附近五百公尺左右之松林下或松林邊。

分佈於，山東，浙江，江蘇，江西，湖北，四川，湖南，貴州，雲南，福建，廣東，廣西等省。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 花（放大四倍）；4. 花之解剖示其子房及鱗片（放大六倍）；5. 小蕊（放大二倍）；6. 蒴果（放大四倍）；7. 種子（放大二倍）；8. 幼葉之一部示其表面之星狀毛（放大五倍）；9. 幼葉之一部示其背面之星狀毛（放大五倍）。



105. *Loropetalum chinensis* (R. Brown) Oliver

Plate 106.

CORYLOPSIS WILLMOTTIAE Rehder et Wilson.

Hamamelidaceae.

Corylopsis Willmottiae Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 425.- Rehder, Manual Cult. Trees & Shrubs, (1927), 321.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 399 (5th edit.).

Deciduous shrub 2 to 3, rarely up to 5, metres high; bark grey or brownish-grey, rarely dark grey; branchlets slender, glabrous, with conspicuous lenticels, rarely stalked-glandular, those of the current year purplish-yellow, those of more than one year old brownish-grey or dark brown. Winter-buds axillary, conical-elongated, shortly stalked, 6-8 mm. long, with purplish-yellow bracts, glabrous outside, white-pubescent inside. Leaves deciduous, coriaceous, alternate, oval or obovate rarely ovate, 5-10 cm. long, 4-6 cm. broad, shortly acuminate on the apex, subcordate or truncate at base, sinuate-dentate on the margin with mucronate teeth, upper surface shiny deep green, glabrous, lower surface pale green or glaucescent, densely sericeous-pilose when young, glabrous or only slightly pubescent along the veins when matured, primary veins 7-10, parallel, inconspicuous above, elevated below; petioles 1-1.5 cm. long, slender, terete, glabrous, rarely stipitate-glandular; stipules oblong, ovate-oblong rarely obovate or obovate-oblong, (usually lower ones obovate and upper ones ovate-oblong), acute, 1-1.5 cm. long, membranaceous, yellow or yellowish-purple, glabrous outside, white sericeous-pilose inside. Flowers soft yellow or greenish-yellow, fragrant, in a terminal villous raceme 3-5 cm. long, on a slender peduncle 1-1.5 cm. long; bracts ovate, purplish-yellow, glabrous outside, white sericeous inside; calyx tubular, glabrous, with 5 sepals triangular-ovate or ovate, 2-3 mm. long; nectaries bifid; petals 5, obovate or suborbicular, 4 mm. long, 3 mm. broad, with a short claw; stamens 5, as long as the petals or slightly longer; ovary glabrous, half-inferior, styles 2, slender, glabrous, slightly curved, stigma subglobose. Fruit a capsule, 8 mm. in diameter, half-inferior, glabrous, brown or yellowish-brown; seeds shiny black, ovoid, about 4 mm. long, obtuse.

MOUNT OMEI: Hei-lung-kiang, alt. 950 m., at side of shady moist ravines, shrub 3 metres high, *S. S. Chien*, No. *5581*, May 7, 1936; Chia-tzu-wan, shrub 2 metres high, flowers greenish-yellow, *W. P. Fang*, No. *18529*, April 28, 1942; Niu-hsin-ssu, alt. 980 m., shrub 2 metres high, flowers greenish-yellow, *W. P. Fang*, No. *18596*, April 16, 1942; Hou-tzu-po, alt. 1100 m., in thickets, shrub 4 metres high, flowers yellow, *C. L. Sun*, No. *1751*, April 25, 1940; same locaity, shrub 1 metre high, leaves chartaceous, stipules oblong-ovate, *W. P. Fang*, No. *16339*, April 28, 1941; Chiu-shih-chiu-tao-kwei, in ravines, shrub 3 metres high, leaves chartaceous, flowers yellowish-green, *C. L. Sun*, No. *168*, May 11, 1939; same locality, in ravines, shrub 3 metres high, *W. P. Fang*, No. *14682*, May 19, 1940; Chiu-lao-tung, alt. 1800 m., in woods, shrub 4 metres high, flowers yellow, *C. L. Sun*, No. *1814*, May 1, 1940; same locality, small tree 10 metres high, branchlets and rhachis stalked glandular, *W. P. Fang*, No. *17122*, June 30, 1941; Chang-show-chiao, *W. P. Fang*, No. *16563*, May 10, 1941; same locality, *W. P. Fang*, No. *18414*, April 21, 1942; near and below Yu-hsien-ssu, alt. 1771 m., in thickets, shrub 3 metres high, bark brown, flowers yellow, *C. L. Sun*, No. *1583*, April 18, 1940; same locality, in forests, shrub 3 metres high, flowers yellowish, rare, *W. P. Fang*, No. *16010*, April 1, 1941; south-west of Mount Omei, Opien-hsien, Yen-king-chi, *W. C. Cheng*, No. 6266, May 1936; same locality, *T. S. Chiao*, No. *34*, April 1938; without precise locality, *T. H. Tu*, No. *171*, in 1935.

SIKANG: Tien-chuan-hsien, alt. 2400 m., shrub 3 metres high, *K. L. Chu*, Nos. *2303*, *2351*, *2390*, *2467* & *2617*, April to May 1836; same locality, *F. C. Tai* & *C. M. Teng*, No. *5105*, August 25, 1939; Pao-hsing-hsien, alt. 2400 m., shrub 4 metres high, *K. L. Chu*, No. *2987*, June 26, 1936.

Distribution: Szechuan, Sikang.

This species is near *Corylopsis platypetala* Rehder et Wilson, but it differs easily in having two-parted nectaries. The latter species was found in Western Hupeh but we have not found in Szechuan.

. . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 5 times); 4, a bract (enlarged 5 times); 5, a flower dissected to show the nectaries, stamens and pistil (enlarged 5 times); 6, a stamen and nectary (enlarged 8 times); 7, a fruit showing the seeds (enlarged 4 times).

圖版一百零六

魏氏蠟瓣花

金縷梅科

落葉灌木高二至三公尺，稀至五公尺；樹皮灰色或灰褐色，稀爲深灰色；小枝細而無毛，具顯著之皮孔，稀具有柄之腺毛，當年之枝紫黃色，多年之枝灰褐色或深褐色。冬芽腋生，長圓錐形，有短柄，長五至八公厘，具紫黃色之苞片，表面無毛，裏面被白色細毛。葉革質，互生，寬橢圓形或倒卵形，稀爲卵形，長五至十公分，寬四至六公分，先端短尖，基部稍呈心臟形或截形，邊緣深波狀具凸形之鋸齒，葉表面爲光亮之深綠色，無毛，葉背面爲灰綠色或具灰色粉末，幼時被濃厚而細絨狀之柔毛，成熟後無毛或僅沿葉脈處徽有毛，側脈七至十對，平行，表面不顯，背面則凸起；葉柄細，長一至一公分半，全圓，無毛，稀具有柄腺毛；托葉長圓形，卵狀長圓形，稀倒卵形或倒卵狀長圓形，（下部者常爲倒卵形，上部者爲卵狀長圓形），銳尖，長一至一公分半，膜質，黃色或黃紫色，外面無毛，內面有白色細軟之柔毛。花黃色或綠黃色，有芬香，生於長三至五公分頂生被柔毛之總狀花序上，而有長一至一公分五公厘之細梗；苞片卵形，紫黃色，外面無毛，內面有白色絨毛；花萼管狀無毛，具五萼片，萼片三角狀卵形或卵形，長二至三公厘；蜜腺二裂；花瓣五枚，倒卵形或稍呈扁圓形，長四公厘，寬三公厘，有短爪；小蕊五本，與花瓣等長或稍長；子房無毛，半下位，花柱二，細而無毛，微曲，柱頭稍呈球形。果爲蒴果，直徑八公厘，半下位，無毛，褐色或黃褐色；種子亮黑色，卵圓形，長約四公厘，錐形。

此種產於峨眉山黑江龍，牛心寺，猴子坡，九十九倒拐，九老洞，長壽橋等處九百五十公尺至一千八百公尺之陰濕山谷或叢林中。西康之天全，寶興等縣亦有之。四五月開花，八九月果可成熟。

此種與寬瓣蠟瓣花相近，所不同者，乃其有裂爲二部之蜜腺。後者產於鄂西，四川尚未發見。

圖解：　1. 花枝（原大）；　2. 果枝（原大）；　3. 花（放大五倍）；　4. 苞片（放大五倍）；　5. 花之解剖示其蜜腺與小蕊（放大五倍）；　6. 小蕊與蜜腺（放大五倍）；　7. 蒴果裂開示其種子（放大四倍）



106. *Corylopsis Willmottiae* Rehder et Wilson

Plate 107.

MELIA AZEDARACH Linnaeus.

Meliaceae.

Melia azedarach Linnaeus, Spec. I (1753), 384.- Thunberg, Fl. Jap. (1784), 180.- Loureiro, Fl. Cochin. I (1790), 269.- Sims in Bot. Mag. XXXVII (1808), t. 1066.- Hiern in Hooker f., Fl. Brit. Ind. I (1875), 544.- Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 74 (Fl. Shangh. 22).- Franchet in Nouv. Arch. Mus. Paris, ser. 2, V (1883), 220 (Pl. David. I. 68).- Hemsley in Journ. Linn. Soc. XXIII (1886), 119.- Diels in Engler Bot. Jahrb. XXIX (1900), 426.- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1911), 126.- Dunn & Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 58 (Fl. Kwangtung & Hongkong).- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 157.- Chun, Chin. Econ. Trees (1921), 203.- Rehder, Manual Cult. Trees & Shrubs (1929), 528.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 3 (1933), 632.

Melia Azedarach, B. *sempervirens* Linnaeus, Spec. 1 (1753), 385.

Melia sempervirens Swartz, Nov. Gen. Sp. Prodr. (1788), 67.- Ker in Bot. Reg. VIII (1822), 643.

Melia florida Salisbury, Prodr. (1796), 317.

Melia sambucina Blume, Bijdr. (1825), 162.

Melia australis Sweet, Hort. Brit. ed. 2 (1830), 86.

Melia japonica G. Don, Gen. Syst. I (1831), 680.- Maximowicz in Act. Hort. Petrop. XI (1890), 96.- Shirasawa, Icon. Ess. For. Jap. II. (1908), t. 35, fig. 14-26.

Melia bukayun Royle, Ill. Bot. Himal. (1839), 144.

Melia Commelinii Medicus ex Steudel, Nomencl. Bot. II (1841), 118 (quasi synon.)

Melia cochinchinensis Roemer, Fam. Nat. Syn. (1846), 95.

Melia orientalis Roemer, Fam. Nat. Syn. (1846), 95.

Melia Toosendan Siebold & Zuccarini in Abh. Akad. Munch. IV. pt. III (1846), 159 (Fl. Jap. Fam. Nat. II. 51).

Melia composita Bentham (non De Candolle), Fl. Austral. I (1863), 380.

Melia chinensis Siebold ex Miquel in Ann. Mus. Lugd.-Bat. III (1867), 23 (quasi synon.); Prol. Fl. Jap. (1867), 211.

Melia Azedarach, var. *subtripinnata* Miquel in Ann. Mus. Lugd.-Bat III (1867), 24; Prol. Fl. Jap. (1867), 212.

Azedarach sempervirens Kuntze, Rev. Gen. I (1891), 109.

Melia japonica, var. *semperflorus* Makino in Tokyo Bot. Mag. XVIII (1904), 67.

Deciduous tree 10-15, rarely up to 20 metres high; bark brownish or brownish-grey, with conspicuous lenticels, smooth or slightly fissured when old; branchlets stout, terete; those of the current year green, sparsely pubescent, those more than one year old grey or brownish-grey, glabrescent, with numerous ovate lenticels. Winter-buds axillary, ovoid, sparsely pubescent. Leaves bipinnate or pinnate, 30-40 cm. long, crowded near the apex of branchlets, leaflets 5-7, acuminate on the apex, broadly cuneate or cuneate at base, remotely and irregularly serrate on the margin, sessile or shortly petiobuled; petioles terete, 8-12 cm. long, dilated at base. Flowers in puberulent panicles 9 cm. long, 7 cm. in diameter; calyx deeply lobed into 5 sepals, lanceolate-oblong, pubescent; petals 5, purplish, oblanceolate, 1 cm. long, 3 mm. broad, puberulent; stamens 10-12, with purple monadelphous filaments, 8 mm. long, dilated at apex and base, anthers yellow, inserted on and nearly equalling the lanceolate teeth of the staminal tube; ovary superior, glabrous, style glabrous, as long as or slightly shorter than the staminal tube, stigma capitate, ovary 5, rarely 3-6-celled, 2-ovuled in each cell. Fruit a globose yellow drupe, 1.5-2 cm. in diameter, stone 5-celled, seeds solitary in each cell.

MOUNT OMEI: Pao-ning-ssu, *W. P. Fang*, without number, April 1945.

SZECHUAN: Chengtu, *S. S. Chien*, Nos. *5281* & *5922*, April 1936; Wang-kiang-lau, *W. P. Fang*, No. *19296*, May 26, 1933; Sha-ho-po, *W. P. Fang*, No. *13601*, May 1939.

Distribution: Shantung, Shensi, Chekiang, Kiangsu, Kiangsi, Hupeh, Hunan, Szechuan, Yunnan, Kwangtung, Formosa; Corea, Japan, India.

This beautiful tree has been found occasionally at the base of Mount Omei. It is colloquially named as "Lien-shu". . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a flower (enlarged 2 times); 3, a flower dissected to show the staminal tube and pistil (enlarged 5 times); 4, a cross section of ovary to show the cells (englared 5 times); 5, fruits (enlarged 5 times); 6, seed (enlarged 5 times).

圖版一百零七

楝樹

楝科

落葉喬木高十至十五公尺，稀達二十公尺；樹皮淡褐色或淡灰褐色，有顯著之皮孔，光滑或老時稍呈片狀淺裂，小枝粗壯，圓形，當年生枝綠色，被稀疏之細毛，多年生枝灰色或淡灰褐色，近於無毛，具卵形皮孔。冬芽腋生，卵圓形，被稀疏之絨毛。葉爲二回羽狀複葉或羽狀複葉，長三十至四十公分，簇生於小枝近頂部處，小葉五至七枚，先端漸尖，基部寬楔形或楔形，邊緣有不規則之稀疎鋸齒，無小葉柄或有短小葉柄；葉柄圓形，長八至十二分，基部膨大。花生於長九公分直徑七公分而具細毛之圓錐花序上，花萼深裂爲五裂片，萼片披針狀長圓形，有毛，花瓣五枚，淡紫色，倒披針形，長一公分，寬三公厘，被細毛；小蕊十至十二本，有紫色之合生花絲，長八公厘，頂部及基部皆膨大，花藥黃色，伸出管外且幾等於管狀小蕊之披針狀鋸齒；子房上位，無毛，花柱無毛，與管狀小蕊等長或稍短，柱頭頭狀，子房五室，稀有三至六室，每室二胚珠。果爲球形之黃色核果，直徑一公分五至二公分，核分五室，每室有一種子。

此種產於峨眉山之保寧寺。四五月開花，九月間果可成熟。

此種分佈於山東，陝西，浙江，江西，湖北，湖南，四川，雲南，廣東，台灣，朝鮮，日本，印度等處。

圖解：1. 花枝（原大）；2. 花（放大二倍）；3. 花之解剖以示小蕊管與大蕊（放大五倍）；4. 子房之橫切面以示其子房室（放大五倍）；5. 核果（原大）；6. 種子（放大五倍）。



107. *Melia azedarach* Linnaeus

Plate 108.

RHODODENDRON NITIDULUM Rehder et Wilson.

Ericaceae.

Rhododendron nitidulum Rehder et Wilson in Sargent, Pl. Wilson. I (1913), 509.

Small shrub ½ metre high; bark grey or dark grey, peeling off in thin flakes; branchlets intricate, terete, those of one year old brown or purplish-brown, densely yellow-scaly, those more than one year old dark brown, rough with persistent scales. Winter-buds ovoid, scales imbricate, ovate or subrotund, scaly at the middle of outer surface, ciliate on the margin, leaf-bud-scales deciduous. Leaves coriaceous, persistent, elliptic or broadly elliptic, 6-9 mm. long, 3-5 mm. broad, acute or broadly acute, mucronulate on the apex, broadly cuneate or cuneate at the base, upper surface green, covered with dense yellow scales, lower surface yellow, covered with overlapping scales, midrib obsolete and primary veins obscure on both surfaces; petioles 2-3 mm. long, scaly. Inflorescence terminal, 1- or 2-flowered, flowers-bud-scales subpersistent, flower-stalks 2-3 mm. long, scaly, flowers purple, calyx well developed, chartaceous, 2 mm. long, sepals triangular or acute, densely scaly outside, corolla funnel-shaped, 1-1.2 cm. long, 2 cm. in dimater, glabrous outside, corolla-tube 5 mm. long, puberulous inside toward the base, lobes ovate or obovate, 5-7 mm. long, stamens 10, exserted, filaments slender, 8-10 mm. long, villous in the lower part, anthers purple, oblong, ovary conical, 2 mm. long, densely scaly, style longer than the stamens, glabrous, stigma capitate. Fruits oblong-ellipsoid capsules, 5 mm. long, 3 mm. in diameter.

MOUNT OMEI: Chin-ting, alt. 3135 m., small shrub ½ metre high, leaves oval, densely scaly on both surfaces, flowers purple, 2 cm. in diameter, always 2 flowers terminal on an inflorescence, style glabrous, stamens 8, glabrous, except puberulous toward the base, corolla not scaly outside, *W. P. Fang*, No. *14622*, June 27, 1940; same localty, shrub ½ metres high, fruits light green, common, *T. C. Lee*, No. *3476*, September 10, 1940; without precise locality, *C. W. Yao*, Nos. *3048*, *4184* & *4689*, in 1939; without precise locality, *H. C. Chow*, No. *667*, in 1937.

This species was discovered by the late Dr. E. H. Wilson in Pao-hsing-hsien (formerly known as Mupin) of Eastern Sikang. It is very limited in dristribution. through the recent explorations we have found it growing commonly at the upper slope of Mount Omei near Chin-ting. It differs from *Rhododednron polycladum* Franchet of Yuannan in the mucronulate leaves with yellow scales on the lower surface. From the type-specimen of *Rhododendron nitidulum* Rehder et Wilson the Omei plants differ in scaly pedicels of the flowers..W. P. Fang.

Fig. 1, a flowering and leafy branch (natural size); 2, a flower (enlarged 2 times); 3, a stamen (enlarged 2 times); 4, a pistil (enlarged 2 times); 5, a corolla dessected to show the pubescence inside near the base (enlarged 2 times); 6, a fruit (enlarged 2 times); 7, upper surface of leaf (enlarged 5 times); 8, lower surface of leaf (enlarged 5 times).

圖版一百零八

亮鱗杜鵑

石南科

小灌木高二分之一公尺；樹皮灰色或深灰色，成薄片脫落；小枝錯綜排列，圓形，一年生枝褐色或紫褐色，密被黃色鱗斑，多年生枝深褐色，粗糙而具宿存之鱗斑。冬芽卵圓形，鱗片覆瓦狀排列，卵形或亞圓形，外面之中部具鱗斑，邊緣具纖毛，葉芽之鱗片早落。葉革質，宿存，橢圓或廣橢圓形，長六至九公厘，寬三至五公厘，先端銳尖或寬銳尖，短而直，基部廣楔形或楔形，葉表面綠色，密被黃色鱗斑，背面黃色，被以覆瓦狀之鱗斑，中脈不顯，側脈在葉之兩面皆不顯明；葉柄長二至三公厘，具鱗斑。花序頂生，具一或二花，花芽鱗片存在時稍久，花梗長二至三公厘，具鱗斑。花紫色，花萼之發育良好，紙質，長二公厘，萼片三角形或銳尖，外面密被鱗斑，花冠漏斗形，長一公分至一公分二，直徑二公分，外面無毛，花冠之管長五公厘，花管內面之基部被毛，裂片卵形或倒卵形，長五至七公厘，小蕊十本，伸出管外，花絲纖細，長八至十公厘，下部有絨毛，花藥紫色，長圓形，子房圓錐形，長二公厘，密被鱗斑，花柱較小蕊尤長，無毛，柱頭頭狀。果爲長橢圓形之蒴果，長五公厘，寬三公厘。

此種產於峨眉山金頂，海拔三千一百三十五公尺處。

此種係威爾遜博士發現於西康東部寶興縣。其分佈區域甚窄，由最近之調查，已知此種遍生於金頂附近之草坡，其不同於滇產之 Rh. polycladum 者，在其具短尖端之葉，背面有黃色之鱗斑。峨山產者花梗具有鱗片，與模式標本稍異。花六月間開放，異常美觀。果實九月始能成熟。

圖解：　1. 花與葉枝（原大）；　2. 花（放大二倍）；　3. 小蕊（放大二倍）；　4. 大雌（放大二倍）；　5. 花冠之解剖以示其內面近基部之絨毛（放大二倍）；　6. 果（放大二倍）；　7. 葉之表面（放大五倍）；　8. 葉之背面（放大五倍）。



108. *Rhododendron nitidulum* Rehder et Wilson

Plate 109.

FAGUS LONGIPETIOLATA Seemen.

Fagaceae.

Fagus longipetiolata, Seemen in Engler, Bot. Jahrb. XXIII, Beibl. No. 57 (1897), 56.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 190.— Rehder, Manual Cult. Trees & Shrubs (1927), 158.— Handel-Mazzetti, Symbolae Sinicae, VII, Lieferung 1 (1927), 27.

Fagus sylvatica, var. *longipes*, Oliver in Hooker Icon. Pl. XX (1890), t. 1936, in textu.— Franchet in Journ. de Bot. (1899), 201.— Skan in Journ. Linn. Soc. XXVI (1899), 525, pro parte, exclud. specim. Henryi Nos. 6793 & 6797.

Fagus sinensis, Oliver in Hooker Icon. Pl. (1890), 1936, (in tabula tantum).— Diels in Engler, Bot. Jahrb. XXIX (1900), 234, fig. j-k.— Koidzumi in Tokyo Bot. Mag. XIX (1916), 95.

Fagus longipes, Leveille, Fl. Kouy-tcheou (1914), 126.

Deciduous tree, usually 10 metres, rarely up to 25 metres, high, 25-50 cm. in diameter, trunk straight; bark grey, or dark grey, smooth; branchlets slender, terete, glabrous, dark brown or purplish brown, with numerous conspicuous ovate lenticels, and with scars of deciduous bud-scales at the end of each year's growth; winter-buds conical or elongated conical, 5-14 mm. long, scales brown, numerous, obtuse or acute, imbricate, glabrous. Leaves alternate, two-ranked, subcoriaceous, ovate or ovate-oblong, 6-12 cm. long, 3-6 cm. broad, acute or shortly acuminate on the apex, broadly cuneate or subrotund at the base, remotely serrate on the margin or with the lower part of the margin entire, upper surface shining green, glabrous, lower surface glaucescent and densely grey-pubesent, but less so when matured, midrib and 9-11 pairs of primary veins just showing above, prominent below, ending in the teeth; petioles slender, 1-2 cm. long, glabrescent. Flowers unisexual monoecious, staminate flowers in heads, on a slender peduncle, 5-10 cm. long, in axils of leaves of young branchlets, pedicels 4 mm. long, perianth 6-lobed, lobes lanceolate, 3-5 mm. long, sericeous-pubescent, stamens 11-12, rarely fewer or more, twice as long as the perianth, filaments slender, glabrous, anthers oblong, yellow, 2-celled, rudimentary ovary absent; pistillate flowers usually 2, surrounded by numerous pubescent subulate bracts united below into a 4-parted subovoid involucre, on a peduncle 3-6 cm. long, perianth 6-lobed, pubescent, ovary inferior, styles 3, slender, recurved, 4-uberulous. Fruit a yellowish-puberulus triangular-ovoid nut, usually 2 in a pubescent, woody pvalved ovoid involucre 2-2.5 cm. long, 1.5 cm. in diameter, covered outside with pubescent bristles, on a peduncle 4-6 cm. long.

WEST OF MOUNT OMEI: Opien-hsien, *W. C. Cheng*, Nos. *6398* & *6404*, in 1936; same locality, *S. N. Hsu*, No. *73*, in 1937; without precise locality, *C. W. Yao*, No. *3614*, in 1939.

SIKANG: Tien-chuan-hsien, Wan-ning-shan, tree 6 metres high, fruits green, *F. C. Tai* & *C. M. Teng*, No. *4244*, July 22, 1939.

KWANGSI: without precise locality. *C. W. Wang*, No. 40543, without date.

Distribution: Shensi, Chekiang, Anhwei, Hupeh, Szechuan, Hunan, Kweichow, Yunnan, Kwangtung, Kwangsi.

This species is easily distingushed from its near ally, *Fagus Engleriana* Seemen, by the pubescent lower surface of its leaves, by the longer petioles which are 1 to 2 cm. in length, and by the subulate appendages covering the outer surface of the involucre. It is very rare in the vicinity of Mount Omei although its wide distribution has been reported in western China as well as eastwards and southwards to the sea-shore. We have found *Fagus Engleriana* Seemen near Hsi-hsiang-chih but it is very rare at this mountain. . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flowering inflorescence (enlarged 2 times); 4, a pistillate flower (enlarged 3 times); 5, a staminate flower (enlarged 3 time); 6, a nut (enlarged 2 times); 7 & 8, portions of leaf enlarged to show the pubescence.

圖版一百零九

長柄山毛櫸 別名：水青剛

殼斗科

落葉喬木高十公尺，稀達二十五公尺；直徑二十五至五十公分，幹直；樹皮灰色或深灰色，光滑；小枝細圓無毛，深褐色或紫褐色，具顯明之卵形皮孔，且枝在每年生長部分之末端有芽鱗脫落後所留之痕跡；冬芽圓錐形或長圓錐形，長五至十四公厘，鱗片褐色，多數，鈍形或銳尖，覆瓦狀排列，無毛。葉互生，成二列，近於革質，卵形或卵狀長圓形，長六至十二公分，寬三至六公分，先端銳尖或短尖，基部廣楔形或亞圓形，邊緣具稀疎之鋸齒，或近於葉基部全緣，葉之表面亮綠色而無毛，背面蒼灰色並具濃密之灰色絨毛，成熟時則漸少，中脈及九至十一對之側脈則在表面顯明，在背面突出，末端直達於齒尖；葉柄纖細，長一至二公分，無毛。花單性，大小蕊花同株，小蕊花成頭狀花序，着生於長五至十公分之細梗上，由嫩枝之葉腋間發出，花梗長四公厘，花被具六裂片，裂片披針形，長三至五公厘，被細柔之絨毛，小蕊十一至十二本，稀較少或更多者，較花被長二倍，花絲細而無毛，花藥長圓形，黃色，二室，不發育之子房缺如；大蕊花二枚常爲數被絨毛之箭形苞片所包圍，苞片下部連合爲一亞鐘圓形之總苞，着生於長三至六公分之梗上，花被六裂，被毛，子房下位，花柱三，纖細，反曲，微被毛。果爲微被黃色細毛之三角卵圓形堅果，常二枚生於一直徑一公分半長二至二公分半之木質被毛而成四瓣裂之卵圓形總苞中，外被以具絨毛之細刺，具長四至六公分之果梗。

此種產於峨眉山西南之峨邊縣。

此種分佈於陝西，浙江，安徽，湖北，四川，湖南，貴州，雲南，廣東，廣西等省。

此種葉之背面有毛，具長一至二公分之葉柄，及被刺狀附屬物包被於總苞之外面，易與其相近之恩氏山毛櫸區別。此種雖在華西極普通，東南向分佈以至於海，而在峨山附近則較少。至恩氏山毛櫸在洗象池附近曾經發見，但亦極稀少。

圖解：1. 花枝（原大）；2.果枝（原大）；3.大蕊花序（放大二倍）；4.大蕊花（放大三倍）；5.小蕊花（放大三倍）；6.堅果（放大二倍）；7 及 8.葉之一部放大以示其絨毛。



109. Fagus longipeticlata Seemen

Plate 110.

FAGUS LUCIDA Rehder et Wilson.

Fagaceae.

Fagus lucida Rehder et Wilson in Sargent, Pl. Wilson III (1916), 191.— Rehder, Manual Cult Trees & Shrubs (1927), 159.— Chien, Icon. Chin. For. Trees I (1937), pl. 12.

Deciduous tree usually 20 to 25 metres high, 1 to 3 metres in diameter, trunk straight, bark dark grey, smooth; branchlets slender, usually pendulous, brown or dark brown, at first sericeous-pilose, then glabrescent, lenticels conspicuous, ovate, with scars of bud-scales at the ends of each year's growth; winter-buds terminal or axillary, elongated conical, 1-1.5 cm. long, scales brown or brownish-yellow, scarious, ovate or lanceolate, imbricate. Leaves alternate, chartaceous, ovate or ovate-lanceolate, 6-9 cm. long, 3-4.5 cm. broad, acuminate at the apex, broadly cuneate or subrotund at the base, sinuate on the margin, with triangular teeth projecting from the base of the sinus, upper surface shining deep green, lower surface pale green, glabrous on both surfaces except sparsely pubescent on the veins, midrib and 10, rarely 12, pairs of straight and paralleled lateral veins ending into the teeth, impressed above, prominent below; petioles terete, 3-15 mm. long, sericeous-pilose above, glabrous below. Flowers unisexual, monoecious, developing with the leaves in June, staminate flowers in axils of leaves from the base of one year old branchlets, in pendulous heads on slender pubescent peduncles 5 cm. in length, pedicels 1 mm. long, perianth campanulate, 3-4 mm. long, sericeous-pilose outside, glabrous inside, 5— or 6-lobed, lobes ovate, stamens 10, rarely to 12, exserted, 5 mm. long, rudimentary ovary densely pilose, pistillate flowers in the axils of leaves from upper part of one-year-old branchlets, usually in a pubescent 4-valved involucre, covered outside by awl-shaped bracts, on a stout peduncle, 5-10, rarely to 15, mm. in length, pubescent near the apex, ovary triangular, yellow-pubescent, styles 3. Fruit a triangular acorn, 1 cm. long, brown-pubescent and with a tuft of hairs near the apex, in a 4-valved woody cup, valves acute, covered outside with bracts, peduncles usually 10 mm. long.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Hai-wu-chi (海屋溪) alt. 1900-2200 m. tree 17-20 metres high. *W. C. Cheng*, No. *6147*, July 5, 1936.

Distribution: Hupeh, Szechuan, Kweichow and Kwangsi.

This species was discovered by Dr. E. H. Wilson in 1907, from Hsing-shan-hsien of western Hupeh. The type-specimen is in leaf only and its flowers and fruits remain unknown. I have great pleasure in reporting its occurrence in the neighbourhood of Mount Omei, not only in order to mark its wider distribution, but also to make possible a full description of flowers and fruit. It differs from *Fagus longipetiolata* Seemen and *Fagus Engleriana* Seemen in the shining bright green lower surface of its leaves whose margin are usually sinuate with small, triangular teeth projecting from the base of the sinus. . . . , ... W. P. Fang.

Fig. 1, a flowering and young fruiting branch (natural size); 2, a staminate flower dissected to show the stamens (enlarged 3 times); 3, a staminate flower (enlarged 5 times); 4, a young fruits covered with in a involucre (enlarged 3 times); 5, the fruit (enlarged 3 times); 6, a portion of leaf to show the hairs on the lower surface.

圖版一百一十

亮葉山毛櫸 別名：光葉青剛

殼斗科

落葉喬木高二十至二十五公尺，直徑一至三公尺，幹直，樹皮深灰色，光滑；小枝纖細，常下垂，褐色或深褐色，初密被絲狀細毛，隨即脫落，皮孔顯著，卵形，枝每年生長部分之末端有芽鱗之痕跡；冬芽頂生或腋生，圓錐形，長一至一公分半，鱗片褐色或褐黃色，乾膜質，卵形或披針形，覆瓦狀排列。葉互生，紙質，卵形或卵狀披針形，長六至九公分，寬三至四公分半，先端漸尖，基部寬楔形或亞圓形，邊緣淺波狀，有三角形之鋸齒由凹處突出，葉表面為光亮之深綠色，背面灰綠色，除葉脈上被稀疏之毛外，葉兩面皆無毛，中脈及十至十二對之直而平行之側脈末端止於齒尖，脈在葉表面不顯著，在葉背面顯著，葉柄渾圓，長三至十三公厘，上面有細柔之絨毛，下面光滑。花單性，大小蕊花同株，於六月中與葉同時發出；小蕊花由一年生小枝之葉腋間發出，生於細纖被毛長五公厘之花梗上聚為下垂之頭狀花序，小花梗長一公厘，花被鐘形，長三至四公厘，外面被細軟柔毛，內面無毛，成五或六枚裂片，裂片卵形，小蕊十本，稀為十二本，伸出管外，長五公厘，不發育之子房被濃密之綿毛；大蕊花由一年生小枝上部之葉腋間發出，常在一有毛之四瓣總苞中，外被以鑽形之苞片，着生於長五至十公厘稀至十五公厘之粗壯果梗上，近先端處被毛，子房三角形，被黃毛，花柱三。果為三角形之橡實，長一公分，被褐色絨毛，近先端被毛一束，生於一四瓣裂之木質總苞中，瓣銳尖，外被以苞片，果梗常長十公厘。

此種產於峨山西南之峨邊縣洗屋基，高一千九百公尺至二千二百公尺之森林中。五六月開花，果實秋後成熟。

此種分佈於湖北，貴州，廣西三省。

此種為一九零七年威爾遜博士於鄂西之興山縣發見，其模式標本僅有葉，花果尚未獲得，現於峨眉山附近發見，可知其分佈實廣，且得詳記其花果之特性，其不同於長柄山毛櫸及恩氏山毛櫸者，在其葉之背面為亮綠色，且葉緣常為深波狀，而有三角形之小齒由波凹處突出。

圖解：1.花與幼果之枝（原大）；2.小蕊花之縱剖示其小蕊（放大五倍）；3.一小蕊花（放大五倍）；4.包被於總苞中之嫩果（放大三倍）；5.果實（放大三倍）；6.葉之一部示其背面之毛。



110. Fagus Lucida Rehder et Wilson

Plate 111.

CASTANEA MOLLISSIMA Blume.

Fagaceae.

Castanea mollissima Blume, Mus. Bot. Lugd.—Bat. I (1850), 286.— Seemen in Engl. Bot. Jahrb. XXIX (1900), 288.— Rehder in Bailey, Stand. Cycl. Hort. II (1914), 682.— Nakai in Tokyo Bot. Mag. XXIX (1915), 54.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 192.

Castanea vesca Bunge (non Gaertner), in Mem. Sav. Etr. Acad. Sci. St.-Petersbourg, II (1833), 137 (Enum. Pl. Chin. Bor. 62).

Castanea bungeana Blume, Mus. Bot. Lugd.—Bat. I (1850), 284.— Nakai in Tokyo Bot. Mag. XXIX (1915), 54.

Castanea vulgaris Hance (non Lamarck), in Journ. Bot. X (1872), 69.— Debeaux in Act. Soc. Linn. Bordeaux, XXXI (1876), 363 (Fl. Tche-fou, 130), quoad plantarum Chinensem. l. c. XXXIII (1879), 64 (Fl. Tien-tsin, 41), quoad plantam Chinensem.

Castanea valgaris, var. *yunnanensis* Franchet in Journ. de Bot. XIII (1899), 196.

Castanea sativa Skan (non Millar), in Journ. Linn. Soc. XXVI (1899), 525, (pro parte).— Leveille, Fl. Kouy-tcheou, (1914), 125.

Castanea sativa, a typica Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.

Castanea Duclouxii Dode in Bull. Soc. Dendr. France, (1908), 150; in Fedde, Rep. Spec. Nov. X (1911), 239.— Schneider, Ill. Handb. Laubholzk. II (1912), 893.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 99.

Castanea hupehensis Dode in Bull. Soc. Dendr. France, (1908), 151, fig.; in Fedde, Rep. Spec. Nov. X (1911), 240— Schneider, Ill. Handb. Laubholzk. II (1912), 899, fig. 563 c-d.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 99.

Castanea crenata Henry (non Siebold et Zuccarini) in Elwes et Henry, Trees Great Brit. & Irel., IV (1909), 854 (pro parte).

Castanea sativa, var. *mollissima* Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910) 250.

Tree 15 to 20 metres high, rarely up to 25 metres high; bark grey or brownish grey, occasionally fissured; branchlets terete, those more than one year old greenish grey or purplish grey, glabrescent, with conspicuous ovate lenticels, those of the current year grey-pubescent; buds axillary, conical, with several pairs of ovate scales, pubescent outside. Leaves deciduous, chartaceous, alternate, arranged in two rows, oblong, ovate-oblong or oblong-lanceolate, 12-19 cm. long, 4.5-8 cm broad, acuminate on the apex, broadly cuneate or subrotund at the base, remotely serrate with appressed pointed teeth on the margin, upper surface deep green, glabrous, lower surface green, glabrous or grey-pubescent, covered with stellate-hairs, midrib conspicuous above, prominent below, lateral nerves 10-20 pairs inconspicous above, conspicuous below, reaching to the tip of the teeth; stipules lanceolate or oblong-lanceolate, 10-15 mm. long, 2-4 mm. broad; petioles terete, 8-18 mm. long, pubescent. Flowers unisexual, monoecious, staminate flowers tufted in axillary upright solitary catkins, 8-14 cm. long, perianth 6-lobed, lobes ovate or obovate, 1.5— 2 mm. long, yellowish brown, ciliate on the margin, white-pubescent on both surfaces, stamens 8-10, rarely 20, rarely more or less, filaments slender, glabrous, 5-6 mm. long, anthers ellipsoid or subglobose, with rudimentary ovary in the centre, pistillate flowers usually 2 or 3 at the base of the uppermost staminate inflorescence, perianth coalescent with the ovary, 6-lobed, ovary inferior, 6-celled, 2 ovules in each cell. Nuts usually 3 inclosed completely by prickly involucre, covered with pubescent branched spines, usually splitting into 4 valves; pedicels 1-3 cm. long, pubescent.

MOUNT OMEI: Pao-ning-ssu, alt. 400 m., *W. P. Fang*, No. *14232*, April 22, 1940; same locality, tree 12 metres high, staminate flowers greenish or yellowish white, *W. P. Fang*, No. *16377*, May 1, 1941; Fu-hu-ssu, alt. 650 m., *W. P. Fang*, No. *14531*, June 10, 1940; Ching-yin-ko, alt. 900 m., on slopes, tree 8-10 metres high, bark greyish black, flowers greenish yellow, *W. W. Ma*, No. *2283*, June 12, 1940; same locality, tree 15 metres high, *G. L. Sun*, No. 1947, May 14, 1940; Kuang-fu-ssu, alt. 1000 m., tree 10 metres high, common, *T. C. Lee*, No. *3667*, October 5, 1940; Lung-sheng-kang, alt. 1015 m., at the side of the forests, tree 7-8 metres high, *T. C. Lee*, No. *3039*, June 29, 1940; near Hung-chun-ping, alt. 1200 m., in thickets, tree 10 metres high, bark grey, flowers light yellow, *G. L. Sun*, No. *541*, June 17, 1939; without precise locality, *G. W. Yao*, No. *5067*, in 1939; north-west of Mount Omei, Yun-king-hsien, *C. W. Yao*, No. *3127*, in 1939; south-west of Mount Omei, Opien-hsien, *W. C. Cheng*, No. *5990* & *5991*, in 1936; same locality, *C. W. Yao*, No. *3887*, in 1939.

SZECHUAN: Chengtu, cultivated near a street, *S. S. Chien*, No. *5344*, June 5, 1936; same, locality, cultivated near a house, tree 12 metres high, flowers yellowish green, *W. P. Fang*, No. *13386*, May 23, 1938; without precise locality. *K. L. Chu*, No. *1450*, in 1935.

Distribution: Liaoning, Hopei, Shantung, Shansi, Chekiang, Kiangsu, Kiangsi, Hupeh, Szechuan, Kweichow, Yunnan, Sikang, Fukien, Kwangtung, Kwangsi.

This is the most common species of *Castanea* in China and has been found indigenous on Mount Omei. It may be distinguished from other species by the lower surface of the leaves, which is glabrous or pubescent with stellate hairs, but not lepidote. W. P. Fang.

Fig. 1, a flowering and leafy branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, pistillate flowers (enlarged 5 times); 5, a portion of leaf showing the hairs on the lower surface (enlarged 10 times).

圖版一百一十一

板　栗　別名：魁栗

殼　斗　科

喬木高十五至二十公尺，稀達二十五公尺；樹皮灰色或褐灰色，稀現深縱裂；小枝圓形，多年生之枝灰綠色或紫灰色，光滑無毛，具顯著之卵形皮孔，當年生枝被灰色絨毛，芽腋生，圓錐形，有數對卵形鱗片，表面有毛。葉冬季凋落，紙質，互生，排成二列，長圓形，卵狀長圓形或長圓披針形，長十二至十九公分，寬四公分半至八公分，先端漸尖，基部寬楔形或微圓，邊緣具有稀疏鋸齒，表面深綠色而光滑，背面綠色，光滑或被灰色細毛及被星形之毛，中脈在葉表面顯明，在葉背面突出，側脈十至二十對，直達於齒尖，在葉表面不顯著，在葉背面顯著，托葉披針形或長圓披針形，長十至十五公厘，寬二至四公厘；葉柄圓形，長八至十八公厘，被絨毛。花單性，大小蕊花同株，小蕊花着生於直立之葇荑花序，長八至十四公分，花被六裂，裂片卵形或倒卵形，長一公厘半至二公厘，黃褐色，邊緣具纖毛，兩面均被白色細毛，小蕊八至十，罕達二十本，稀更多或更少，花絲細而無毛，長五至六公厘，花藥橢圓形或亞圓形，中部有不發育之子房；大蕊花二三枚生於最高之小蕊花序之基部，花被與子房合生而成六裂片，子房下位，六室，每室二胚珠。堅果常三枚全包於刺狀總苞中，而被以被毛分枝之刺，常裂爲四瓣；果梗長一至三公分，被毛。

此種產於峨眉山保寧寺，伏虎寺，清音閣，龍昇崗等處，四百公尺至一千公尺之路旁或森林中。四五月開花，九月後果可成熟。

此種分佈於遼寧，河北，山東，山西，浙江，江蘇，江西，湖北，四川，貴州，雲南，西康，福建，廣東，廣西，等省。

此種爲中國板栗屬中之最普通者，在峨眉山野生者極爲普遍。其不同於別種者，在其葉下無毛，或具星狀之毛，但無鱗斑。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.大蕊花（放大五倍）；5.葉背面之一部（放大十倍）。



III. Castanea mollissima Blume

Plate 112.

CASTNEA HENRYI Rehder et Wilson.

Fagaceae.

Castanea Henryi (Skan) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 196.

Castanea Henryi Skan in Journ. Linn. Soc. Bot. XXVI (1899), 523.— Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 101.

Castanea sativa Skan (non Millar) in Journ. Linn. Soc. Bot. XXVI (1899) 525 (pro parte).

Castanea sativa, var. *acuminatissma* Seemen in Engler, Bot. Jahrb. XXIX (1900), 287.— Pampanini in Nuov. Bot. Ital. n. ser. XVII (1900), 250.

Castanea Vilmoriana Dode in Bull. Soc. Dendr. France, (1908), 156, fig.; in Fedde Repert. Nov. Spec. X (1911), 242.— Schneider, Ill. Handb. Laubholzk. II (1912), 899. fig. 563h.— Rehder in Bailey, Stand. Cycl. Hort. II (1914), 682.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 100.

Castanea Fargesii Dode in Bull. Soc. Dender. France, (1908), 158, fig.; in Fedde, Repert. Nov. Spec. X (1911), 242.— Schneider, Ill. Handb. Laubholzk. II (1912), 899, fig. 563 i-k.— Koidzumi in Tokyo Bot. Mag. XXX (1916), 99.

Castanea crenata Henry (non Siebold & Zuccarini). in Elwes et Henry, Trees Great Brit, & Irel., IV. (1909) 854 (pro parte).

Tree usually 10 metres high, rarely up to 20 metres high; branchlets cylindrical, brown or dark brown, with conspicuous ovate lenticels, usually glabrous except greyish pubescent on those of the current year; buds axillary, ovoid, glabrous, with several pairs of ovate scales. Leaves alternate, deciduous, chartaceous, lanceolate, 12-17 cm. long, 2-5 cm. broad, acuminate or long-acuminate on the apex, cuneate, broadly cuneate or subrotund at the base, coarsely serrate, with appressed bristle teeth on the margin, upper surface deep green, glabrous, lower surface pale green, glabrous or grey-pubescent while young, midrib conspicuous above, prominent below, lateral nerves 13-16 pairs, slightly impressed above, raised below, reaching to the tip of the teeth; petioles 1-1.5 cm. long; stipules lanceolate, caduoous. Flowers unisexual, monoecious, appeering after the leaves, in spikes, staminate spike usually in axils of leaves and from the lower part of branchlets, 12-15 cm. long, upright, with compact flowers; pistillate spikes 1-4 cm. long, pubescent, from the upper part of branchlets, with few flowers; staminate flowers 2 mm. in diameter, 2-3 crowded in a bract, perianth 6-lobed, ovate or oblong-ovate, 1.5-2 mm. long, pubescent on both surfaces and the margin, stamens 10-12, usually 4-5 mm. long, filaments slender, glabrous, anthers ovoid, 2-celled, rudimentary pistil present or absent; pistillate flowers sessile, solitary, 3 mm. long, 2 mm. in diameter, lower bracts ovate, pubescent, upper bracts lanceolate or ovate-lanceolate, perianth 6-lobed, lanceolate or narrow-lanceolate, pubescent, ovary inferior, styles 6. Fruit a solitary, globose nut, wholly covered by a prickly involucre 3 cm. in diameter. spines pubescent; pedicels 3.5 cm. long, stout, glabrous or occasionally pubescent.

MOUNT OMEI: Lung-men-tung, alt. 545 m., small tree with greenish staminate flowers, in catkins, *W. P. Fang*, No. *14320*, May 10, 1940; Lung-sheng-kang, alt. 1015 m., at side of forests, tree 15 metres high, *T. C. Lee*, No. *3040*, July 29, 1940; same locality, tree 8-9 metres high, *T. C. Lee*, No. *3658*, October 4, 1940; Ling-kuan-lau, alt. 1000 m., in forests, tree 10-15 metres high, flowers yellowish, *W. P. Fang*, Nos. *16628* & *16684*, May 12, 1941; Pao-chang-feng, alt. 1400 m., tree about 8 metres high, staminate flowers white, *W. P. Fang*, No. *16713*, May 20, 1941; Taping, alt. 1400 m., in forests, tree about 10 metres high, common. *W. P. Fang*, No. *14654*, May 18, 1940; same locality, tree 8 metres high, young fruits light green. *T. C. Lee*, No. *2782*, July 12, 1940; Hsin-kai-ssu, alt. 1300 m., *C. L. Chow*, No. *8804*, October 30, 1938; Hsi-hsin-so, alt. 1100 m., in forests, small tree 7 metres high, *W. P. Fang*, No. *14809*, May 20, 1940; same locality, shrub 4-6 metres high, leaves green above, pubescent below, young fruits light green, *T. C. Lee*, No. *2967* & *3627*, July to October 1940; Southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, Nos. *5990* & *5991*, April 16, 1938; without precise locality, *T. H. Tu*, No. *783*, in 1933; without precise locality, *C. W. Yao*, No. *5054*, in 1939.

SZECHUAN: Kuan-hsien, alt. 1000 m., in forests, tree 10-20 metres high, bark grey, deeply fissured, *S. S. Chien*, Nos. *4742*, & *5614* May to October 1936.

Distribution: Chekiang, Anhwei, Kiangsi, Hupeh, Szechuan, Kweichow and Yunnan.

This speies is easily distiuguished from *Castanea mollissima* Blume and *Castanea Seguinii* Dode by the solitary fruits and separate staminate and pistillate inflorescences. On Mount Omei it is colloquially known as "Tseng-tze" (榛子). Its seeds also are edible, but, by the natives their value is considered secondary to those of *Castanca mollissima* Blume . . . . W. P. Fang.

Fig. 1, a flowerieg branch (natural size); a fruiting branch (natural size); 3, a staminate flower (enlarged 6 times); 4 a pistillate flower (enlarged 6 times); 5, a seed (natural size).

圖版一百一十二

錐　栗　別名：尖栗，桂花栗子；峨眉山俗名榛子。

殼斗科

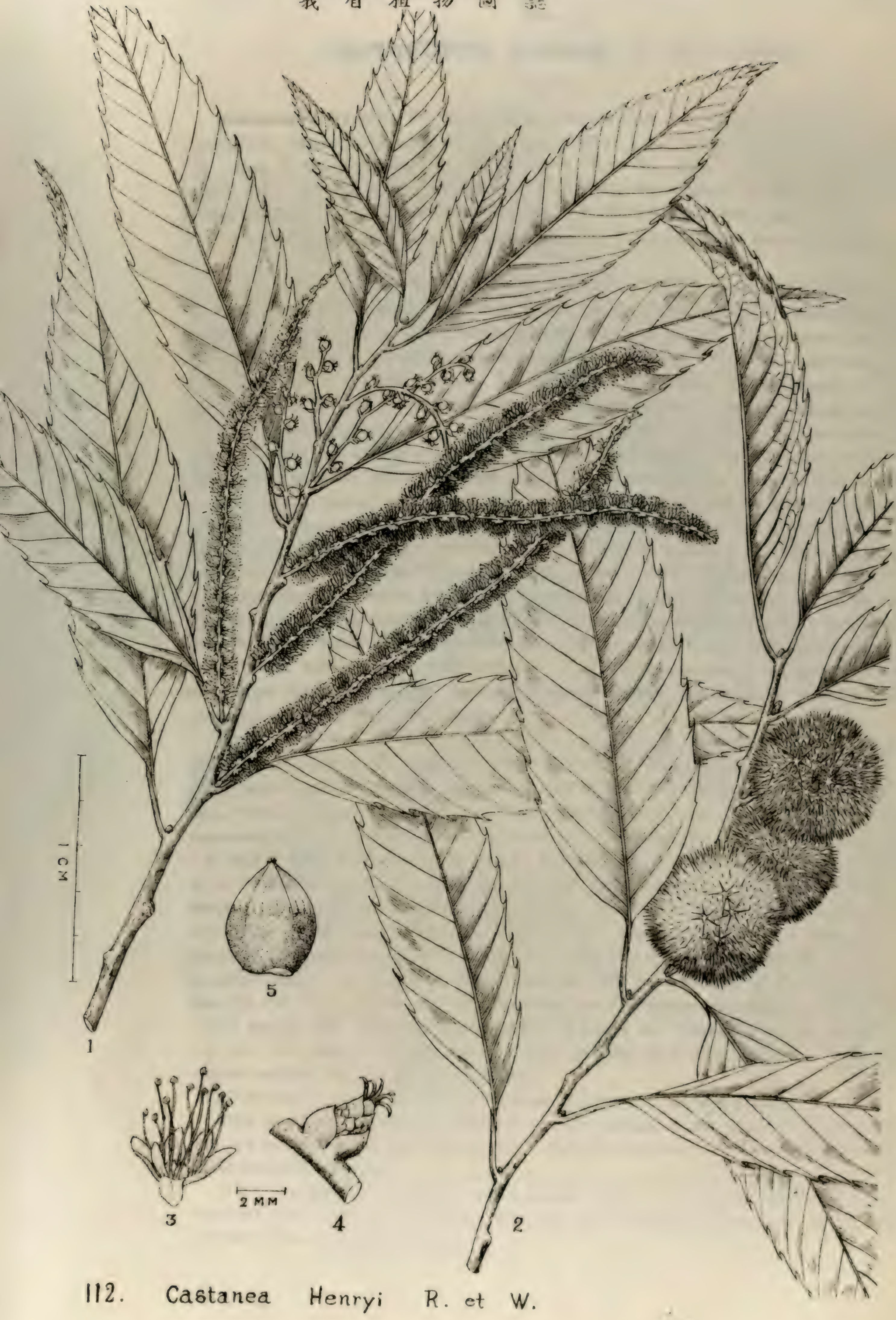
喬木高十公尺，稀達二十公尺；小枝圓柱形，褐色或深褐色，具顯著之卵形皮孔，除當年生之枝被灰色絨毛外，其餘之枝常無毛；冬芽腋生，卵圓形，無毛，具數對卵形鱗片。葉互生，冬季凋落，紙質，披針形，長十二至十七公分，寬二至五公分，先端漸尖或長尖，基部楔形或廣楔形抑或亞圓形，葉緣具剛毛狀之稀疏尖鋸齒，葉表面深綠色無毛，葉背面灰綠色無毛或幼嫩時被灰色之細毛，中脈在葉表面顯明，在葉背面突出，側脈十三至十六對，在葉表面微凹下，在葉背面則隆起，側脈先端直達齒尖；葉柄長一公分至一公分半；托葉披針形，早落。花單性，大小蕊花同株，生葉後始開放，成穗狀花序；小蕊花之花序生於葉腋間，且自小枝之下部發出，長十二至十五公分，直立，具密集之花；大蕊花序長一至四公分，被毛，由小枝上部發出，僅具數花；小蕊花直徑二公厘，二至三花聚集於一苞片內，花被六裂，裂片卵形或長圓卵形，長一公厘半至二公厘，兩面及邊緣皆被毛，小蕊十至十二本，長四至五公厘，花絲較細，無毛，花藥卵圓形，二室，不發育之子房或有或無；大蕊花無柄，單生，長三公厘，直徑二公厘，較低之苞片卵形並被毛，較上之苞片披針形或卵狀披針形，花被六裂，披針形或狹披針形，被細毛，子房下位，花柱六。果爲單生圓球形之堅果，全被於直徑三公分且具尖刺之總苞中，刺被絨毛；果梗長三公分半，粗壯，無毛或偶被絨毛。

此種產於峨眉山之龍門洞，靈官樓，大坪，新開寺及息心所等處，海拔五百四十六公尺至一千六百公尺之森林中。五月開花，十月果始成熟。

此種分佈於浙江，安徽，江西，湖北，貴州及雲南諸省。

此種與他種之區別，在其有單生之果及分別之大小蕊花序。在峨眉山則通稱爲榛子，其種子可食，但當地人則視其價值較次於板栗。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大六倍）；4.大蕊花（放大六倍）；5. 種子（原大）。



112. Castanea Henryi R. et W.

Plate 113.

CASTANOPSIS HYSTRIX A. De Candolle.

Fagaceae.

Castanopsis hystrix, A. De Candolle in Seemen Journ. Bot. I (1863), 182; Prodr. XVI, pt. 2, (1864), 111.- Miquel in Ann. Mus. Lugd.-Bat. I (1863-4), 119.- Hooker f., Fl. Brit. Ind. V (1883), 620.- King in Ann. Bot. Card. Calcutta, II (1889), 95, t. 84.- Skan in Journ. Linn. Soc. XXXVI (1899), 524.- Dunn in Journ. Linn. Soc. XXXVIII (1908), 367.- Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 197.- Handel-Mazzetti, Symb. Sin. VII, Liferung I (1929), 27.

Castanea hystrix Hooker f. et Thomson, mss. ex A. De Candolle, Prodr. XVI, pt. 2 (1864), 111 (pro synon.)

Quercus rufescens, Hooker f. et Thomson ex Hooker f. Fl. Brit. Ind. V (1888), 620 (pro synon.)

Evergreen tree usually 10 to 15, rarely up to 20, metres high, branchlets slender, terete, those of the current year brown or yellow-pubescent, those more than one year old glabrous or glabrescent, with numerous ovate or elliptical lenticels; winter-buds ellipsoid, scales ovate, imbricate, densely yellow-pubescent on the outer surface. Leaves alternate, coriaceous, oblong-lanceolate or oblong-ovate, rarely elliptical, 7-12 cm. long, 2.5-3.5 cm. broad, acuminate or caudate-acuminate on the apex, broadly cuneate or subrotund at the base, entire on the margin or rarely obtusely serrate above the middle, upper surface shining green, glabrous, lower surface densely yellow-pubescent while young, less so when matured, midrib impressed above, elevated below, primary veins 13-15 pairs, obsolete above, prominent below; petioles 6-10 mm. long, slightly grooved above, rounded below, sparsely pubescent. Flowers unisexual, monoecious; staminate flowers white at first and changing to yellow later, in erect, pubescent catkins 7-18 cm. in length, solitary in the axil of leaf from the branchlets of the current year or from those two years old; sepals 5, ovate, 2 mm. long, glabrescent outside, villous inside; stamens 9-10, exserted, 6 mm. long, filaments slender, glabrous, anthers subglobose, 2-celled, rudimentary ovary densely tomentose; pistillate flowers opening after the staminate flowers, sessile, in solitary erect catkins 5-8 cm. long, bracts ovate, ciliate; sepals 4 or 5, ovate, glabrescent outside, villous inside, styles 3, stout, stigma rounded. Fruit a brownish conical nut, ripening the second year, in an ovoid yellow-pubescent involucre covered outside with pubescent, subulate, simple or compound spines and interrupted ridges.

MOUNT OMEI: near the city of Omei-hsien, alt. 460 m., in forest, tree 10 metres high, flowers white in erect spikes, *S. S. Chien*, No. *5407*, May 3, 1936; Wan-kan, alt. 470 m., on grassy slope, tree 20 metres high, *W. P. Fang*, No. *14082*, April 13, 1940; Pao-ning-ssu, alt. 470 m., tree 10 metres high, flower in buds, *W. P. Fang*, No. *14223*, April 29, 1940; same locality, tree 10 metres high, staminate flower over and pistillate flower greenish, *W. P. Fang*, Nos. *16373*, *16287*, & *16477*, May 1 to May 6, 1941; Hsiao-tien-tze, alt. 470 m., in forest, tree 8 metres high, staminate flower white, *W. P. Fang*, Nos. *14260* & *14282*, May 10, 1940; Pao-kuo-ssu, alt. 500 m., tree 8 metres high, staminate flowers buffish yellow with offensive order or in erect catkin, *W. P. Fang*, No. *14230*, May 1, 1940; same locality, in grave-yard, small tree 8 metres high, *W. P. Fang*, No. *13921*, March 19, 1940; same locality, *W. P. Fang*, No. *18701*, May 6, 1942; Lung-men-tung, alt. 546 m., tree 10 metres high, *W. P. Fang*, No. *14194*, April 20, 1940; same locality, *W. P. Fang*, No. *16284*, April 19, 1941; Ching-yin-ko, alt. 900 m., in forest, tree 15-20 metres high, common, *W. P. Fang*, No. *16638*, May 12, 1941; Chin-lung-ssu, alt. 960 m., in woods, tree 6 metres high, flowers white, *C. L. Sun*, No. *1965*, March 14, 1940; without precise locality, *H. C. Chow*, No. *9679*, in 1938; without precise locality *C. W. Yao*, No. *4131*, in 1939.

Distribution: Chekiang, Fukien, Szechuan, Hunan, Kweichow and Yunnan.

This Himalayan species of *Castanopsis* is very common at the foot of Mount Omei where it formed a pure forest and attacts the eye of the visitor by its broad crown with evergreen leaves and white flowers in the spring...W. P. Fang.

Fig. 1, a staminate flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a pistillate flowering inflorescence (natural size); 5, a pistillate flower (enlarged 10 times).

圖版一百一十三

栲　樹

殼斗科

常綠喬木高十至十五公尺，稀達二十公尺，小枝細圓，當年生枝具褐色或黃色細毛，多年生之枝無毛或近於光滑，具多數卵形或橢圓形之皮孔；冬芽橢圓形，鱗片卵形，覆瓦狀排列，表面被有濃密之黃色細毛。葉互生，革質，長圓披針形或長圓卵形，稀成橢圓形，長七至十二公分，寬二公分半至三公分半，先端漸尖或成尖尾狀，基部闊楔形或微圓，全緣或中部以上具稀疏之鈍鋸齒，表面亮綠色，無毛，幼時葉之背面有濃密之黃色細毛，成熟時則無，中脈在葉表面凹下，在葉背面隆起，側脈十三至十五對，在葉表面不顯，在葉背面則突出；葉柄長六至十公厘，上面微有溝，下面圓形，被稀疏之細毛。花夏季開放，單性，大小蕊花同株，小蕊花初為白色，後變為黃色，着生於直立被毛而長七至十八公分之葇荑花序上，僅一花序生於由當年生枝或兩年生枝之葉腋間；萼片五枚，卵形，長二公厘，表面光滑，內面被柔毛；小蕊九至十本，向外伸展，長六公厘，花絲細而無毛，花藥亞圓球形，二室，不發育子房被濃密之短毛；大蕊花開於小蕊花之後，無梗，生於長五至八公分單生直立之葇荑序花上，苞片卵形，被纖毛；萼片四或五枚，卵形，表面光滑，裏面有柔毛，花柱三，粗壯，柱頭圓形。果為褐色圓錐形之堅果，兩年成熟，生於卵圓形且被黃毛之總苞內，總苞外被有刺及細毛。

此種產於峨眉山之山麓；自峨眉縣城起，以迄於保寧寺，蕭店子，報國寺，龍門洞，金龍寺等四百六十公尺至九百六十公尺之森林中或路旁。

此種分布於浙江，四川，福建，湖南，貴州及雲南等省。

此種原產於喜馬拉雅山，在峨山麓極猝普遍，常成純碎森林。其綠葉聚成之廣大樹冠及五六月所開之白花，極易引起遊人之注意。

圖解：　1. 小蕊花枝（原大）；　2. 果枝（原大）；　3. 小蕊花（放大十倍）；　4. 大蕊花序（原大）；　5. 大蕊花（放大十倍）。



113. Castanopsis hystrix A. DC.

Plate 114.

CASTANOPSIS PLATYACANTHA Rehder et Wilson.

Fagaceae.

Castanopsis platyacantha, Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 200.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 28.- Rehder, Manual, Cult. Trees & Shrubs, (1927), 161.

Tree usually 10, rarely up to 21 metres high; trunk straight, about 1-2 metres in diameter at breast height, bark brownish-grey, usually fissured and peeling off in irregular, thin flakes; branchlets purple or deep purple, glabrous, with conspicuous ovate or elliptical lenticels; Winter-buds terminal or axillary, oblong-ellipsoid or conical rarely ovate, 8-15 mm. long, 5 mm. in diameter, scales numerous, biseriate, opposite, acute, shining grey, glabrous except puberulous near the apex, ciliate on the margin. Leaves persistent, coriaceous, elliptical-oblong or elliptical, rarely oblong-ovate or elliptical-lanceolate, 9-15 cm. long, 3.5-6.5 cm. broad, acuminate at the apex, obliquely cuneate or broadly cuneate, rarely subrotund, at the base, remotely dentate above the middle of blade and entire below the middle, as well as slightly revolute on the margin, upper surface shining green, glabrous, lower surface covered with tomentum except glabrous on the midrib, tomentum yellow at first, then changing to grey or whitish-grey, midrib slightly elevated or flat above, prominent below, lateral nerves 8-10, obsolete above, conspicuous below, reaching nearly to the margin; petioles stout, 8-15 mm. long, flat above, rounded below, glabrous. Flowers unisexual, monoecious, staminate catkin simple, slender, glabrous, angulate, 7-16 cm. long, in axils of leaves from the current-year branchlets, flowers fasciculate, perianth 6-lobed, lobes anguste, concave, ovate or obovate, 1.5-2 mm. long, 1-1.5 mm. broad, glabrous outside, stamens 10, exserted, 4.5-5 mm. long, filaments slender, filiform, glabrous, anthers glabrous, rudimentary ovary glabrous, pistillate spikes stout, 5-8 cm. long, solitary, in axils of leaves from the upper part of current year branchlets, pistillate flowers 1-3 in an involucre, sessile, perianth-lobes ovate, glabrous outside, villous inside, styles 3, glabrous, stigma minute. Fruit a pubescent broadly conical-ovoid, apiculate nut, ripening the second year, 1.2-1.5 cm. long, 1.2-1.8 cm. broad, 1-3 in a grey-tomentose, echinate, subglobose involucre, 1.5-2.5 cm. in diameter, covered outside with concentrated, fasciculate spines, 3-5 mm. long, pointed at the apex, compressed at the base or awl-shaped, grey-tomentose except glabrous near the apex.

MOUNT OMEI: Ta-ping, alt. 1400 m., in woods, tree 12 metres high, rare, *T. C. Lee*, No. *2780*, July 12, 1940; Yu-hsien-ssu, alt. 1771 m., in woods, tree 10 metres high, pistillate flowers greenish, *T. C. Lee*, No. *2827*, July 14, 1940; Chang-lao-ping, alt. 1600 m., in forest. tree 15 metres high, *W. P. Fang*, No. *14827*, May 21, 1940; en route from Chu-tien to San-tou-ho, alt. 1650 m., in forest, tree 10 metres high, *C. L. Sun*, No. *306*, May 21, 1936; Hua-yen-ting, alt. 1950 m., in forest, tree 12 metres high, *W. P. Fang*, No. *12892*, August 3, 1938; same locality, tree 10 metres high, mixed with *Lithocarpus* sp. *T. C. Lee*, No. *2895*, July, 1940; same locality, tree 8-10 metres high, *T. C. Lee*, Nos. *3591*, & *3977*, October 1940; Chiu-lao-tung, alt. 1876 m., in woods, tree 10 metres high, flowers green, *C. L. Sun*, No. *2147*, May 25, 1940; near Chiu-lao-tung, alt. 1800 m., at open slope, tree 7-10 metres high, staminate flower light green, *W. W. Wu*, No. *2460*, June 18, 1940; Pai-yun-ssu, alt. 2450 m., *H. C. Chow*, No. *7911*, July 20, 1938; southwest of Mount Omei, Opien-hsien, Hai-ta-hu-wu-chi, alt. 1600 m., tree 10-21 metres high, bark brownish-grey, peeling off in thin flakes, *W. C. Cheng*, Nos. *6100*, *6113*, *6489* & *6686*, July 1936; same locality, *S. N. Hsu*, No. *17*, 1937; Opien-hsien, Wu-keng-shu, tree 10 metres high, flowers white, *C. L. Sun*, No. *750*, July 20, 1939; without precise locality, *C. W. Yao*, Nos. *3847* & *4840*, in 1939; without precise locality, *H. C. Chow*, Nos. *9712* & *9891*, in 1938; without precise eocality, *T. H. Tu*, No. *161*, in 1933; without precise locality, *K. L. Chu*, No. *1014*, in 1933.

SIKANG: Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, No. *4240*, July 22, 1939.

Distribution: Szechuan, Sikang, Hunan and Yunnan.

This species is fairly common on the middle and the upper slopes of Mount Omei and is usually found in company with *Lithocarpus*. It is a pretty tree with a broad crown..................W. P. Fang.

Fig. 1, a staminate flowering and leafy branch (natural size); 2, a pistillate flowering branch (natural size); 3, a fruiting and leafy branch (natural size); 4, a pistillate flower (enlarged 10 times); 5, a staminate flower (enlarged 10 times).

圖版一百一十四

扁刺栲樹

殼斗科

喬木高十公尺，稀達二十一公尺；幹直，胸高直徑約一至二公尺，樹皮褐灰色，常裂爲不規則之薄片而脫落；小枝紫色或深紫色，無毛，有顯明之卵形或橢圓形皮孔；冬芽頂生或腋生，長圓狀橢圓形或圓錐形稀爲卵形，長八至十五公厘，直徑五公厘，鱗片多數，排列爲二行，對生，銳尖，亮灰色，除近先端被細毛外餘皆無毛，邊緣具纖毛。葉常綠，革質，橢圓狀長圓形或橢圓形，稀爲長圓卵形或橢圓狀披針形，長九至十五公分，寬三公分半至六公分半，先端漸尖，基部斜楔形或寬楔形，稀爲亞圓球形，葉片有稀疎之鋸齒，中部以下爲全緣，緣稍微反折，葉之表面亮綠色而無毛，葉之背面除中脈外有鬆狀之毛，初爲黃色，後變爲灰色或白灰色，在葉表面之中脈稍隆起或突出，在葉背面則凸出，側脈八至十對，在葉表面不顯明，在葉背面則顯明，直達於葉緣；葉柄粗壯，長八至十五公厘，上面扁平，下面圓形，無毛。花單性，大小蕊花同株，小蕊花成單生葇荑花序，細而無毛，長七十至六公分，由當年生枝上之葉腋間發出，花叢生，花被六裂，裂片狹長，向內凹，卵形或倒卵形，長一公厘半至二公厘，寬一公厘至一公厘半，外面無毛，小蕊十本，伸出花外，長四公厘半至五公厘，花絲纖細，綫形，無毛，花藥無毛，發育不全之子房密被絨毛；大蕊花之穗粗壯，長五至八公分，單生，由當年生枝上部之葉腋間發出，大蕊花一至三枚生於一總苞內，無梗，花被裂片卵形，外面無毛，內面被柔毛，花柱三，無毛，柱頭小。果爲一具細毛之寬圓錐形堅果，頂尖，兩年成熟，長一公分二至一公分半，寬一公分二至一公分八，在每一有灰色短毛稍呈球形之總苞中有一至三枚，直徑一公分五至二公分五，外被以輻集叢生之刺，長三至五公厘，先端尖，基部扁形或鬃形，除近先端無毛外皆被有灰色細毛。

此種產於峨眉山大坪，九老洞，遇仙寺，長老坪，華嚴頂，白雲寺等處一千四百公尺至二千四百五十公尺之大森林中。五六月開花，果實次年成熟。

此種分布於四川，西康，湖南及雲南等省。

此種在峨眉山中部及較上部，甚爲普遍，常見其與石櫟屬之植物混生，樹極美觀而有廣大樹冠。

圖解：1. 小蕊花及其葉枝（原大）；　2. 大蕊花枝（原大）；　3. 果與葉枝（原大）；　4. 大蕊花（放大十倍）；　5. 小蕊花（放大十倍）。



114. Castanopsis platyacantha Rehder & Wilson.

Plate 115.

CASTANOPSIS CERATACANTHA Rehder et Wilson.

Fagaceae.

Castanopsis ceratacantha, Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 199.- Handel-Mazzetti, Symb. Sin. VII, Leiferung 1 (1929), 28.- Rehder Manual Cult. Trees & Shrubs. (1927), 161.

Tree 8-20 metres high, 1-2 metres in diameter; branchlets slender, terete, those of the current year densely yellowish or grey-tomentose or villose, those more than one year old glabrescent, grey or dark grey, with conspicuous ovate lenticels; winter-buds ovoid, scales pubescent, biseriate, scarious. Leaves persistent, coriaceous, alternate, usually in two ranks, oblong-lanceolate or rarely elliptical, oblong, 9-12 cm. long, 3-4.5 cm. broad, acuminate at apex, broadly cuneate or subrotund at the base, entire or sparsely dentate near the apex, upper surface green, glabrous, lower surface densely yellowish tomentose or villous, midrib impressed above, elevated below; primary veins 14-18 pairs, divergent at an angle of 45°, obsolete above, prominent below; petioles 4-10 mm. long, grooved above, rounded below, densely grey villous. Flowers unisexual, monoecious, staminate flowers in a villous erect single catkin 15-20 cm. long, solitary in the axils of leaves from the current year branchlets, staminate flowers with 2-3 ovate bracts, densely villous outside, perianth 5-lobed, lobes ovate, 2 mm. long, glaborous, stamens 8-10, exserted, about 4 mm. long, filaments slender, glabrous, anthers subglobose, yellow, 2-celled, rudimentary ovary ellipsoid, densely villous, pistillate flowers not found. Fruit ripening the second year, sessile, in a villous or tomentose stout spike, 16-20 cm. long, nuts conical-ovoid, 8-15 mm. high, tomentulose, brownish, 1-3, usually 2, in a subglobose densely grey tomentulose involucre, covered outside with pointed and slender spines.

MOUNT OMEI: Northeat of Mount Omei; Lo-shan-hsien, Wu-yu-ssu, in forest, tree 20 metres high, *H. C. Chow*, No. *9676*, May 4, 1939; northwest of Mount Omei, Wa-wu-shan, *C. Y.Yao*, No. *4117*, in 1938.

Distribution: Szechuan and Yunnan.

This a very distinct species and is easily recognized by the densely yellow-villous or tomentose hairs on the young branchlets of the current year, on the lower surface of leaves and on the inflorescences, and by the densely villous, involucral fruits, covered with numerous long slender, spines. It was discovered by the late Mr. E. H. Wilson at Wa-shan and Wa-wu-shan, west and north-west of Mount Omei. Mr. C. W. Yao found it again at the type-locality. It is very interesting to have Mr. H. C. Chow's collection in reporting the occurence of this species at the northeast of Mount Omei. Although von Rosthorn found it at Nanchuan-hsien in Eastern Szechuan and A. Henry found it at Szemao in Southern Yunnan, it is very rare in all the above mentioned localities.

Fig. 1, a staminate flowering branch (natural size); 2, a young fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a portion of leaf (enlarged 5 times).

圖版一百一十五

長刺栲樹

殼斗科

喬木高八至二十公尺，直徑一至二公尺；小枝細圓，當年生枝被濃密之黃色或灰色柔毛，多年生枝無毛，灰色或深灰色，具顯明之卵形皮孔；冬芽卵圓形，鱗片被毛，排列成二行，膜質。葉常綠，革質，互生，常成二列，長圓披針形或稀為橢圓狀長圓形，長九至十二公分，寬三至四公分半，先端漸尖，基部廣楔形或亞圓形，全緣或近於先端具稀疏之鋸齒，表面綠色無毛，背面被濃厚之黃色絨毛或柔毛，中脈在葉表面不顯，在葉背隆起，側脈十四至十八對，與中脈相交之角成四十五度，在葉表面微有痕跡，在葉背則突出；葉柄長四至十公厘，上面有溝，下面圓形，被濃密之灰色細毛。花單性，大小蕊花同株，小蕊花生於長十五至二十公分被柔毛而直立之葇荑毛序上，單生於當年生枝之葉腋間，小蕊花具二至三卵形苞片，外面被濃密之柔毛，花被五裂，裂片卵形，長二公厘，無毛，小蕊八至十本，伸出管外，長約四公厘，花絲細而無毛，花藥呈亞圓球形，黃色，二室，不發育之子房為錐圓形，被有濃密之柔毛；大蕊花不明。果於次年成熟，無梗，在一被柔毛或短毛而粗壯之穗狀花序上，長十六至二十公分，堅果圓錐狀卵圓形，高八至十五公厘，微被短毛，褐色，一至三枚，常為二枚，生於亞圓球形被濃密灰色短毛之總苞內，外被以尖而細之刺。

此種產於峨眉山東北之樂山縣烏尤寺及峨眉山西北滎經縣瓦屋山森林中。五六月開花。

此種當年生之幼枝，葉之背面及花序，被濃密之黃色柔毛及濃密之短毛，而總苞復被以長細之刺，極易與別種辨別。此種為威爾遜博士於峨山西北之瓦山及瓦屋山中發現，姚仲吾君又於原產地採得。其他如川東之南川縣及雲南之思茅縣雖亦有發現，但極稀少。

圖解：1. 小蕊花枝（原大）；2. 幼果枝（原大）；3. 小蕊花（放大五倍）；4. 葉之一部（放大五倍）。



115. *Castanopsis ceratacantha* Rehder et Wilson

Plate 116.

CASTANOPSIS CHUNIANA Fang.

Fagaceae.

Castanopsis Chuniana Fang, spec nov.

Arbor sempervirens 15 metris (45 cubitis) alta; ramuli fortes et sparsi, usque ad secundum annum densi flavi coloris. Gemmae conicae, 8-12 mm. longae; peruli scariosi et triangularo-acuti; extrinsecus puberulosi, intrinsecus glabrescentes, 5-8 mm. longitudinis et 5 mm. latitudinis. Folia alternata perennia (persistentia), coriacea, oblongo-lanceolata vel oblongo-oblanceolata, apice acuto et acuminato, basi dense cinereo-pubescenti vel fusco-pubescenti, 7-12 cm. longa, 3-3.4 cm. lata; in exteriori facie viridis micantis coloris et glabra; in interiori facie densi leucophaci coloris aut flavi; costa media extrinsecus canalitia, intrinsecus prominenti, nervis principibus 17-20, supra obsoleta et subtus elevata. Petioli 5-8 cm. longi, supra plani vel leviter canalitii, subtus rotundii. Flores monocloni (monoeci); flores masculi in amenta multiplices, erecti, flavi tomentosi, 12-14 cm. longi, in axillis foliorum crescentium in ramulis 2-anni. Bracteae obtusae, exterius dense-tomentosae; sepales 5 vel 6, ovati, 2 mm. longi, foris glabri, intrinsecus (intus) puberuli. Stamina 10 vel 11, plerumque 5 mm. longa, anthera subglobosa, 2-loculi (loculamenti); filamenti graciles glabri plerumque hamati; ovarii rudimenta dense tomentosa; flores pistillati plerumque 3 in uno involucro et etiam in amenta terminali aut in parte superiori ramulorum. Bracteae acutae, densae flavo-tomentosae; sepales exterius pubescunt; styli 3, fortes, 1 mm. longitudinis. Fructus ignotus.

Evergreen tree about 15 metres high; branchlets stout, terete, densely yellow-tomentose on those current year and those of 2-years old ones. Winter-buds conical, 8-12 mm. long, bracts scarious, triangular-acute, puberulous outside, glabrescent inside, 5-8 mm. long, 5 mm. broad. Leaves alternate, persistent, coriaceous, oblong-lanceolate or oblong-oblanceolate, acute with abrupt acumen on the apex, broadly cuneate at the base, 7-12 cm. long, 3-3.4 cm. broad, upper surface shining green, glabrous, lower surface densely grey or yellowish-pubescent, midrib grooved or impressed above, prominent below, primary veins 17-20, obsolete above and raised below; petioles 5-8 mm. long, flat or slightly grooved above, rounded below. Flowers monoecious; staminate flowers in erect, yellow-tomentose compound catkins 12-14 cm. long, in the axils of leaf from the branchlets of 2-years old, bracts obtuse, densely tomentose outside, sepals 5 or 6, ovate, 2 mm. long, glabrous outside, puberulous inside, stamens 10 or 11, about 5 mm. long, anthers glabrescent, 2-celled, filaments slender, glabrous, usually curved, rudimentary ovary densely tomentose; pistillate flowers usually 3 in an involucre, usually in a terminal catkin or from upper part of branchlets, bracts acute, densely yellow-tomentose, sepals pubescent outside, styles 3, stout, 1 mm. long. Fruit unknown.

NORTHWEST OF MOUNT OMEI: Hung-ya-hsien, Wa-wu-shan, "Ridge of the Lion", on slopes, tree 15 metres high, *C. W. Yao*, No. *3564*, June 14, 1939.

This new species is distinct from all the known species of the genus *Castanopsis*. It may be near *Castanopsis ceratacantha* Rehder et Wilson, but differs in having conical buds with scarious bracts, the compound staminate catkins and its stout branchlets are tomentose even when two years old.

This new species is named in honour of Professor Woon-young Chun, Director of the Botanical Institute, National Sun-yatsen University, and a prominent authority on this family, who has made invaluable contributions to our knowledge of the plants of this group. . . . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, pistillate flowers (enlarged 15 times); 3, a staminate flower (enlarged 15 times).

圖版一百一十六

陳氏栲樹 新種

殼斗科

常綠喬木高約十五公尺；小枝粗壯圓形，當年生及二年生枝密被黃色絨毛。冬芽圓錐形，長八至十二公厘，苞片膜質，三角狀銳尖，表面被細毛，內面光滑，長五至八公厘，寬五公厘。葉互生，宿存，革質，長圓狀披針形或長圓狀倒披針形，先端突尖，基部寬楔形，長七至十二公分，寬三至三公分四公厘，表面亮綠色無毛，背面密被灰色或黃色細毛，中脈在葉表面成溝狀或僅稍凹下，在背面突出，側脈十七至二十對，表面模糊在背面隆起；葉柄長五至八公厘，上面扁平或少有溝，下面圓形。花單性，大小蕊花同株，小蕊花着生於直立被黃色細毛而長十二至十四公分之複葇荑花序上，由二年生枝之葉腋間發出，苞片鈍形，外面被濃密之細毛，萼片五或六枚，卵形，長二公厘，外面無毛，內面被細毛，小蕊十或十一本，長約五公厘，花藥光滑，二室，花絲纖細而無毛，常彎曲，不發育之子房被濃密之細毛；每一總苞內常有大蕊花三枚，着生於頂生之葇荑花序上，或由小枝上部發出，苞片銳尖，被濃密之黃色短毛，萼片外面被毛，花柱三枚，粗壯，長一公厘。果之特性尚不明。

此種產於峨眉山西北之洪雅縣瓦屋山獅子崗。五六月開花。

此新種與本屬已知之種類均易於區別。與長刺栲樹相近，所不同者，在其有圓形之芽具乾而成膜質之薄苞片，小蕊花成複葇荑花序，及其粗壯之小枝雖當第二年時亦被細毛。

此新種之命名，係從國立中山大學植物研究所所長陳煥鏞教授之姓。陳教授爲治此科之權威，於此科植物之分類貢獻極大，故以其姓名此新種以紀念之。

圖解：1. 花枝（原大）；2. 大蕊花（放大十五倍）；3. 小蕊花（放大十五倍）。



116. *Castanopsis Chuniana* Fang.

Plate 117.

LITHOCARPUS CLEISTOCARPA (Seemen) Rehder et Wilson.

Fagaceae.

Lithocarpus cleistocarpa (Seemen) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 205.

Quercus cleistocarpa, Seemen in Engler, Bot. Jahrb. XXIII, Beibl. No. 57 (1897), 52; XXIX (1900), 295.- Skan in Journ. Linn. Soc. XXVI (1899), 510.- Franchet in Journ. de Bot. XIII (1899), 157.

Quercus fragifera, Franchet in Journ. de Bot. XIII (1899), 157.

Quercus Wilsonii Seemen in Fedde, Rep. Nov. Spec. III (1906), 53.

Passonia Wilsonii Schottky in Engler, Bot. Jahrb. XLVII (1912), 660.

Passonia cleistocarpa, Schottky in Engler, Bot. Jahrb. XLVII (1912), 660.- Koidzumi in Icon. Pl. Koisitov. I (1912), 113, t. 57.

Synaedrys Wilsonii, Koidzumi in Tokyo Bot. Mag. XXX (1916), 187.

Synaedrys cleistocarpa, Koidzumi in Tokyo Bot. Mag. XXX (1916), 188.

Tree 15 to 20 rarely up to 20 metres high, bark dark grey, rough and usually deeply fissured; branchlets stout, angulate, glabrous, green or greenish-grey, with conspicuous ovate lenticels; winter-buds axillary, conical, scales imbricate, triangular-acuminate, puberulous on both surfaces. Leaves persistent, coriaceous, elliptic-oblong or oblong-lanceolate, 14-18 cm. long, 4.5-6 cm. broad, acute or shortly acuminate at the apex, cuneate or broadly cuneate and decurrent at the base, entire and slightly revolute on the margin, upper surface shining green or yellowish-green, lower surface pale green, grey-tomentulose, covered with thin indumentum at first, then glabrescent, midrib slightly elevated above, distinctly elevated below, primary veins 11-13, obsolete above, distinct below; petioles 1.5-2 cm. long, grooved above, rounded below, glabrous. Flowers monoecious; staminate flowers in erect sparsely puberulous catkin, 12-15 cm. long, sepals 5 or 6, ovate, 1 mm. long, densely grey-pubescent outside, glabrescent inside, stamens 10 to 12, usually 5-7 mm. long, slender, glabrous, anthers yellow, subglobose, 2-celled; pistillate flowers usually 3 in an involucre in aerect stout catkin from upper part of branchlet; usually above the staminate catkins, sepals 5 or 6, ovate, usually connate at its lower two-third, styles 3, stout, glabrous. Fruit a yellow, depressed, subglobose nut, almost wholly enclosed by the cup-like involucre, 1-1.5 rarely 2 cm. in diameter, scales obtuse, densely grey-pubescent, connate at base into a concentric ring.

MOUNT OMEI: Chang-lao-ping, alt. 1600 m., *S. S. Chien*, No. *6155*, July 15, 1937; same locality, in forest, tree 20 metres high, *W. P. Fang*, No. *14824*, May 21, 1940; Hua-yen-ting, alt. 1950 m., in forest, tree 15 metres high, staminate flower white, common, *W. P. Fang*, No. *12891*, August 3, 1938; same locality, at roadside, tree 15 metres high, *W. P. Fang*, No. *16586*, May 10, 1941; near Chiu-lao-tung, alt. 1800 m., tree 10 metres high, *W. W. Ma*, No. *2461*, June 16, 1940; near Chiu-lao-tung, alt. 1800 m., tree 10 metres high, *W. W. Ma*, No. *2461*, June 16, 1940; Hsi-hsiang-chih, alt. 2100 m., on slope, tree 10 metres high, staminate flowers yellow, pistillate flowers light green, common, *T. C. Lee*, No. *2908*, July 21, 1940; Ta-cheng-ssu, alt. 2300 m., at side of forest, tree 10 metres high, staminate flower light yellow, *T. C. Lee*, No. *2914*, July 21, 1940; same locality, in forest, tree 8 metres high, *W. P. Fang*, No. *17177*, July 5, 1941; southwest of Mount Omei, Opien-hsien, Yen-king-chi, *W. C. Cheng*, Nos. *6179* & *6448*, in 1936; same locality, in forest, small tree 10 metres high, *C. L. Sun*, No. *878*, July 30, 1939; without precise locality, S. N. Hsu, Nos. *19* & *683*, in 1938; without precise locality, *C. W. Yao*, *Nos. 2340, 2817, 3816*, & *4443* in 1939.

SIKANG: Pao-hsing-hsien (formerly known as Mupin), alt. 2450 m., tree 25-30 metres high, *K. L. Chu*, No. *3102*, July 14, 1936; Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, Nos. *5052, 5100* & *5224*, July to September 1939.

Distribution: Hupeh, Szechuan, Sikang.

This species is a very pretty evergreen tree found commonly in Western Hupeh and Eastern Szechuan. On Mount Omei it has been found, so far, only occasionally on the middle slopes, that is, from 1600 to 2300 metres above sea-level. It is easily recognized by the leaves which on the lower surface are grey-tomentose at first and glabrescent later, and by the flat subglobose nut, almost wholly enclosed by the obtuse scaly involucre..W. P. Fang.

Fig. 1, a leafy and staminate flowering branch (natural size); 2, a young fruiting branch (natural size); 3, a fruiting spike (natural size); 4, a staminate flower (enlarged 10 times.)

Plate 117A. **Lithocarpus cleistocarpa** Rehder et Wilson, var. **omeiensica** Fang, var. nov.

A typo differt foliis supra et subtus glabris.

MOUNT OMEI: Lien-hua-shih, alt. 1921 m., *H. C. Chow*, No. *7743*, July 2, 1938; Pai-yun-ssu, alt. 2536 m., *H. C. Chow*, No. *7912*, July 20, 1938; same locality, tree 15 metres high, staminate flowers yellowish-green, pistillate flowers greenish, *W. P. Fang*, No. *17310*A, July 14, 1941.

This variety differs from the type-species in having leaves which are glabrous on both surfaces ....W. P. Fang.

Fig. 1, a flowering and fruiting branch (natural size); 2, a staminate flower (enlarged 20 times).

圖版一百一十七

全苞石櫟 別名：槲樗樹，鐵青剛。

殼斗科

喬木高十五至二十公尺，稀達二十五公尺；樹皮黑灰色，粗糙，常裂成溝狀；小枝粗壯，有稜角，無毛，綠色或灰綠色，具顯明之卵形皮孔；冬芽腋生，圓錐形，鱗片覆瓦狀排列，三角狀漸尖形，兩面均被細毛。葉宿存，革質，橢圓狀長圓形或長圓狀披針形，長十四至十八公分，寬四公分半至六公分，先端銳尖或短漸尖，基部楔形或廣楔形且基部向下延伸，葉緣全緣或微向背面反捲，表面深綠色或黃綠色，背面灰綠色，微被灰色細毛，最初蓋以薄毛，旋卽脫落而光滑，中脈在葉表面微隆起，在葉背面則隆起較顯明，側脈十一至十三對，在葉表面微現痕跡，在葉背面較清楚；葉柄長一公分半至二公分，上面有溝紋，下面圓形，無毛。大小蕊花同株，小蕊花生於直立被疏稀細毛之葇荑花序上，長十二至十五公分，萼片五或六枚，卵形，長一公厘，外面被濃密之灰色細毛，內面光滑，小蕊十至十二本，常長五至七公厘，纖細而無毛，花藥黃色，呈亞圓球形，二室；大蕊花常有三枚生於一總苞內，着生於小枝上部，直立而粗壯之葇荑花序上，常在小蕊葇荑花序之上，萼片五或六枚，卵形，下面三分之二常連合爲一體，花柱三，粗壯，無毛。果爲黃色扁亞圓球形之堅果，幾全爲杯狀之總苞所包被，直徑一至一公分半稀爲二公分。鱗片鈍形，被濃密之灰色細毛，基部連合成環狀。

此種產於峨眉山之長老坪，華嚴頂，九老洞，洗象池，大乘寺海拔一千六百公尺至二千三百尺之森林中。七八月開花。次年果實始成熟。

此種分佈於湖北，四川，西康等三省。

此種爲一美觀之常綠樹。在鄂西與川東皆極普遍。於峨眉山此種則多在山之腰。其葉背面初被灰色細毛，後轉變爲光滑，及扁平亞圓球形之堅果幾全包被於其鈍形鱗片之總苞內，故易與別種辨別。

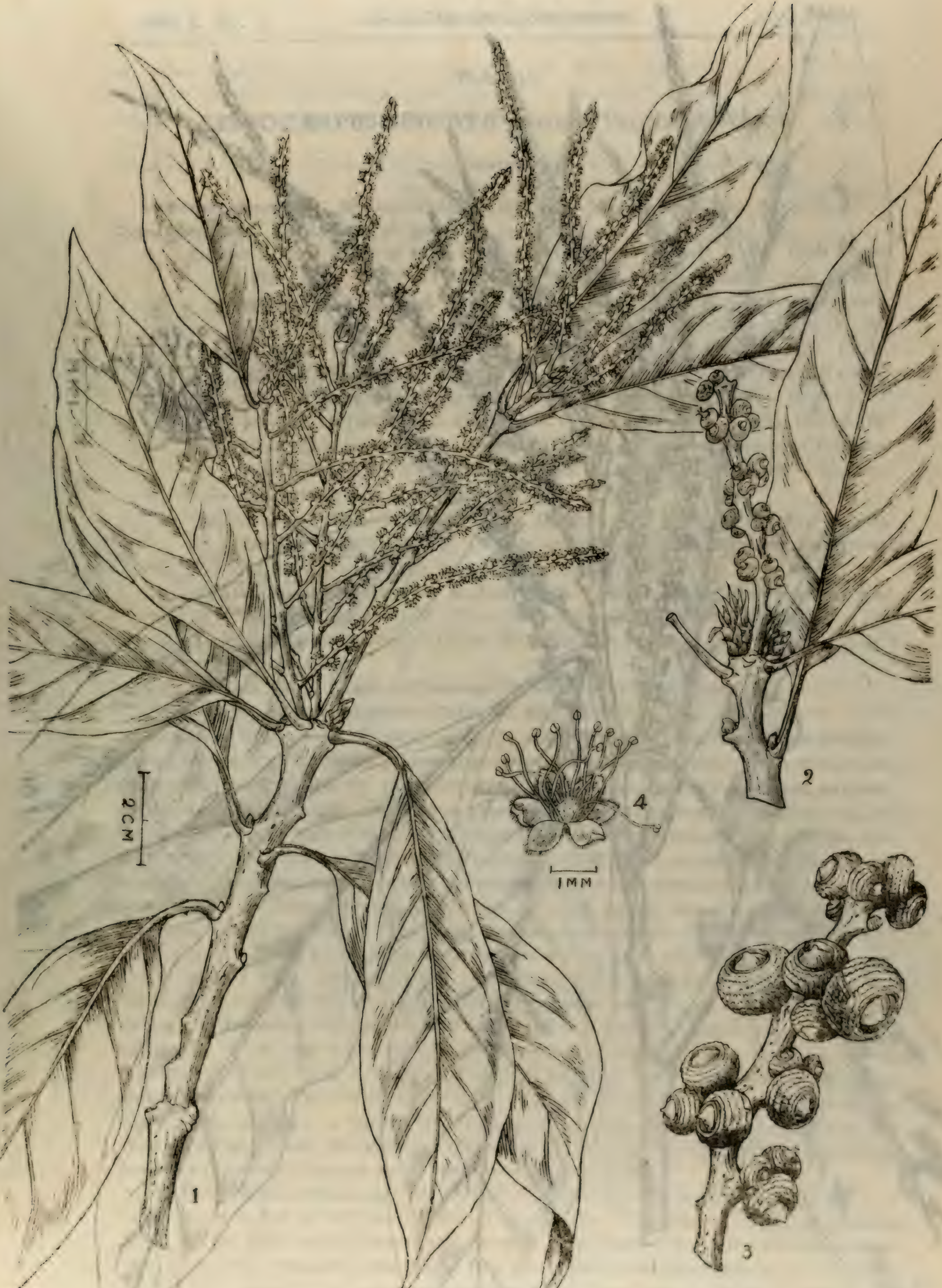
圖解：1. 小蕊花枝（原大）；2. 嫩果枝（原大）；3. 成熟之果序（原大）；4. 小蕊花（放大十倍）。

圖版 171A. 峨眉全苞石櫟 新變種

此新變種不同於原種者，在其葉之兩面均無毛。

此新變種產於峨眉山之蓮花石及白雲寺二千公尺至二千五百公尺之森林中。樹高十五公尺，小蕊花黃綠色，大蕊花綠色。

圖解：1. 花與果之枝（原大）；2. 小蕊花（放大二十倍）。



117. *Lithocarpus cleistocarpa* Rehder et Wilson



117 A. *Lithocarpus cletistocalpa* Rehder et Wilson var. *omeiensis* Fang

Plate 118.

LITHOCARPUS SPICATA (Smith) Rehder et Wilson.

Fagaceae.

Lithocarpus spicata, (Smith) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 207.— Chun, Chin. Econ. Trees, (1921), 88, pl. 30.

Quercus spicata, Smith in Rees, Cyclop. XXIX (1819), No. 12.— D. Don, Prodr. Nepal. (1825), 56.— Wallich, Pl. As. Rar. I (1830), 40, t. 46.— Miquel, Fl. Ind. Batav. II (1855), 848; in Ann. Bot. Lugd.—Bat. I (1863-64), 106.— A. De Candolle, Prodr. XVI, pt. 2 (1864), 86.— Oudemans in Verh. Akad. Wetensch. Amsterdam, XI, No. 3 (1865), 2, t. 1, fig. 1-3 (Annot. Cupul. Jav.).— Brandis, Forest Pl. Ind. (1874), 489; Ind. Trees, (1906), 629, fig. 194.— Kurz, Forest Fl. Brit. Burma, II (1877), 486.— Wenzig in Engler, Jahrb. Bot. Gart. Berlin, IV (1886), 224.— Hooker f., Fl. Brit. Ind. V (1888), 609.—King in Ann. Bot. Gard. Calcutta, II (1889), 47, t. 41, fig. 1-2.— Franchet in in Journ. de Bot. XIII (1899), 155, quoad specimen e Yunnan.— Skan in Journ. Linn. Soc. XXVI (1899), 521, quoad specimen Delavayi.— Koorders, Exkursionsfl. Java, II (1912), 65.

Quercus elegans, Blume in Batav. Perhaud. IX (1825), 208; Bijdr. (1825), 518; Fl. Java, Cupulif. (1828-29), 21, t. 10.— Oudemans in Verh. Akad. Wetensch. Amsterdam, XI, No. 3, (1865), 2, t. 3, fig. 1-4 (Annot. Cupul. Jav.).

Quercus Arcaula, Hamilton ex D. Don, Prodr. Fl. Nepal. (1925), 56 (Pro synon.); apud Sprengel, Syst. III (1826), 857.— Blume, Ann. Bot. Lugd.-Bat. I (1850), 290.

Quercus squamata Roxburgh, Fl. Ind. III (1832), 638.— Wight, Icon. Pl. Ind. Orient. I (1840), t. 213.

Passonia spicata, Oested in Kjoebenh, Vidensk. Meddel. XVIII (1866), 83.

Synadrys spicata, Koidzumi in Tokyo Bot. Mag. XXX (1916), 198.

Evergreen tree, usually 15, rarely up to 20 metres, high; bark brownish-grey or dark grey, slightly fissured; branchlets stout, green or purplish-green, glabrous, with conspicuous ovate lenticels; winter-buds terminal or axillary, conical, scales yellow, subacute, glabrescent. Leaves persistent, coriaceous, glabrous, elliptical-lanceolate or obovate-oblong, rarely oblanceolate, 14-[illegible] cm. long, 4-7 cm. broad, acute or subacute to acuminate at the apex, cuneate or rarely broadly cuneate at the base, entire on the margin, upper surface deeply green, lower surface pale green or yellowish-green, midrib depressed above, elevated below, primary veins [illegible]-10 pairs, impressed above, prominent below, petioles subcylindrical, glabaous. Flowers monoecious, staminate catkins terminal or axillary, grey-tomentose, usually branched, 4-10 cm. long, staminate flowers usually 3 enclosed by an acute bract and two lateral subacute bracts tomentose outside, perianth 5-6-lobed, lobes ovate, 1-1.5 mm. long-hirsute, stamens 10-12, slender, 2-3 mm. long, filaments glabrous, anthers yellow, subglobose, [illegible] celled, rudimentary ovary absent, pistillate catkins terminal on branchlets and usually above staminate catkins, grey-tomentose, 7-10 cm. long, pistillate flowers scattered on the catkin, usually [illegible] enclosed by an acute hirsute bract and two obtuse hirsute bractlets, perianth 6-lobed, hirsute, ovary 3-celled, ovules 2 in each cell, styles 3, stout, glabrous, stigma small. Fruits matured the second year crowded on a stout, erect fruiting spike, 15 cm. in length, nut shiny, yellowish, conical or conical-ovoid, 2.5 cm. long, 2 cm. in diameter, mostly enclosed by the cupules while young, but only one-third to one-fifth of the lower part of nut embraced by the cupules when matured, cupules densely covered with concentric acute or obtuse bracts, densely grey-hirsute.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., *T. H. Tu,* No. *742,* in 1935; same locality. *S. S. Chien,* No. *6108,* July 14 1937; same locality, *H. C. Chow,* No. *7976,* August 1, 1938; same locality, *C. W. Yao,* No. *4881,* in 1939; same locality, in woods, tree 15 metres high, leaves deep green above, light green below, staminate flewers green, fruit a nut with whitish green cupules, *T. C. Lee,* Nos. *3220* & *3221,* August 8, 1940; same locality, in forest, tree 7-9 metres high, staminate flowers yellow, *T. C. Lee,* No. *3380,* August 44, 1940.

Distribution: Szechuan, Yunnan; Java, India.

The characters of this species are variable, but it is easily recognized by the glabrous leaves with primary veins distinctly conspicuous on the lower surface and by the large acorn which has only the lower part covered by the cupules when matured. Its near ally is *Lithocarpus cleistocarpa* R. et W., that species, however, has leaves which are tomentulose on the lower surface and flat acorns

almost wholly covered by the cupules. The distribution of *L. spicata* is from India eastward to Sikang, Yunnan and Szechuan. On Mount Omei it is rare. As this species has variable leafy characters the author considers that the variety *mupinensis* R. et W.* should be reduced to the type species. . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting spike (natural size); 3, a staminate flower (enlarged 10 times); 4, the pistillate flowers (enlarged 10 times).

Lithocarps megaphylla, Rehder et Wilson in Sargent, Pl. Wilson. III (1917), 208.

SZECHUAN: North-west of Mount Omei, Yun-king-hsien, Wa-wu-shan, *C. W. Yao*, No. *4067*, in 1939.

Distribntion: Szechuan.

This is a very distinct species and is easily distinguished from its near ally, *Lithobarpus spicata* Rehder et Wilson, by its oblong-elliptical leaves which are shortly acuminate at the apex, obliquely cuneate at the base, entire and revolute on the margin, and with ten pairs of parallel and curved primary veins distinctly elevated at the lower surface, and by the subangular branchlets with several rows of conspicuous ovate lenticels. It is confined to the type-locality . . . . W. P. Pang.

* Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 207.

圖版一百一十八

粗穗石櫟

殼斗科

常綠喬木常高十五公尺，稀達二十公尺；樹皮灰褐色或黑灰色，微現溝狀淺裂；小枝粗壯，綠色或紫綠色，無毛，具顯著之卵形皮孔；冬芽頂生或腋生，圓錐形，鱗片黃色，稍銳尖，光滑。葉宿存，革質，無毛，橢圓狀披針形或倒卵狀長圓形，稀爲倒披針形，長十四至二十公分，寬四至七公分，先端銳尖或稍銳尖以至於漸尖，基部楔形或稀爲廣楔形，全緣，葉表面深綠色，背面灰綠色或黃綠色，中脈在葉表面凹下，在葉背面隆起，側脈八至十二對，表面微凹下，背面顯著；葉柄呈亞圓柱形，無毛。大小蕊花同株，小蕊花成頂生或腋生之葇荑花序，被灰色柔毛，常分枝，長四至十公分，小蕊花常三枚包被於銳尖之大苞片及外面被細毛而稍銳尖之二側苞片中，花被五至六裂，裂片卵形，長一至一公分半，被細毛，小蕊十至十二本，纖細，長二至三公厘，花絲無毛，花藥黃色，呈亞圓球形，二室，不發育之子房缺如；大蕊花所成之葇荑花序頂生於小枝上且常在小蕊花葇荑花序之上，被灰色柔毛，長七至十公分，大蕊花疎生於花序上，常有三枚包被於被毛而銳尖之苞片及二鈍形被毛之小苞片中，花被六裂，被粗毛，子房三室，每室二胚珠，花柱三，粗壯，無毛，柱頭小。果兩年成熟，叢生於一粗壯直立長十五公分之果穗上，堅果亮黃色，圓錐形或圓錐卵圓形，長二公分半，直徑二公分，幼嫩時大多包被於殼斗中，但成熟時則堅果僅下部之三分之一至五分之一爲總苞所包被，殼斗密被銳尖或鈍形密被灰色細毛之苞片。

此種產於峨眉山之九老洞，一千八百公尺之森林中。七八月開花，次年果始成熟。

此種分佈於四川，雲南爪哇及印度。

此種之特性時有變異，但其無毛之葉，背面具極顯而易見之側脈，及其大橡實着生於粗壯之果序上，且當成熟時僅基部被於殼斗，故易識別。其相近之種當爲全苞石櫟，但該種葉背被稀疏之柔毛，其扁平之橡實幾全包於殼斗。

粗穗石櫟之分佈，由印度東至西康四川雲南三省。在峨山則稀罕。因此種葉之特性變異極大，故作著認爲其變種實與粗穗石櫟應併於原種。

圖解：1.花枝（原大）；2.果穗（原大）；3.小蕊花（放大十倍）；4.大蕊花（放大十倍）。

大葉石櫟

此種產於峨眉山西北之榮經縣瓦屋山。

此種之分佈限於原產地。

此種因有長橢圓形之葉，先端短而漸尖，基部斜楔形，全緣而反捲，及具十對平行而彎曲之側脈，在葉背面隆起甚顯著，以及其稜形小枝，具數列顯著之卵形皮孔，極易與其相近之粗穗石櫟區別。



118. *Lithocarpus spicata* Rehder et Wilson.

Plate 119.

LITHOCARPUS VIRIDIS (Schottky) Rehder et Wlison.

Fagaceae.

Lithocarpus viridis, (Schottky) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 210.

Quercus polystachya, Skan in Jonrn. Linn. Soc. XXVI (1899), 519, quoad specimena e Yunnan, No. 9636 excepto.

Passonia viridis, Shottky in Engler, Bot. Jahrb. XLVII (1912), 668.

Synaedrys viridis, Koidzumi in Tokyo Bot. Mag. XXX (1916), 196.

Tree 18, rarely up to 20, metres high, bark grey or dark grey, fissured; branchlets terete, glabrous, those current year ones green, those more than one year old grey or dark grey, with conspicuous ovate lenticels; winter-buds ovoid, bracts imbricate, ovate or acute, grey-pubescent rarely glabrescent outside, glabrous inside. Leaves persistent, thick-coriaceous, glabrous, oblong-elliptic or lanceolate rarely oblong-ovate or oblong-obovate, 9-11 cm. long, 3-3.5 cm. broad, acute or acuminate with a short acumen at the apex, broadly cuneate or cuneate and decurrent at the base, entire and slightly revolute on the margin, upper surface shining green, lower surface pale green or yellowish green, midrib elevated on both surfaces, primary veins 13-15, obsolete above and just showing below; petioles 1.5-3 cm. long, terete, glabrous, usually stout at the base. Flowers monoecious; staminate flowers in pubescent erect compound catkins. 9-11 cm. in length; perianth 5- or 6-lobed, lobes triangular acute, 1-1.5 mm. long, white tomentulose outside, densely white tomentulose inside, stamens 10, yellow or purplish-yellow, 4. mm. long, usually curved, anthers subglobose, 2-celled, filaments slender, glabrous, ovary rudimentary; pistillate flowers 3 or 2, in a pubescent involucre on a pubescent, terminal, erect catkin, 5 to 10 cm. long, perianth mostly covered by the involucre, the apex of its lobes acute, pubescent, styles 3, stout, stigma on the apex. Fruit a conical nut, matured the second year, about one-half from its base enclosed by the cup-like involucre, scales obtuse, concentric, grey-pubescent.

MOUNT OMEI: She-tao-tui, alt. 1300 m., in thickets, small tree 8 metres high. *C. L. Sun*, No. *2064;* May 18, 1940; Taping, alt. 1400 m., in forests, small tree 8 metres high, rare, *W. P. Fang*, No. *14655*, May 18, 1940; Hsi-hsin-so, alt. 1600 m., in woods, tree 15 metres high, bark brown, flowers whitish, *C. L. Sun*, No. *2268*, May 31, 1940; Yu-hsien-ssu, alt. 1771, m., in forest, small tree 8 metres high, *W. P. Fang*, No. *12862*, August 2, 1938; Chiu-lao-tung, alt. 1876 m., tree 10 metres high, staminate flowers yellowish-white, *W.P. Fang*, No. *18964*, June 4, 1941; west of Moun, Omei, Opien-hsien, Shaping, *W. C. Cheng*, No. *6105*, in 1936; same locality, tree 20 metres high, *C.L. Sun*, No. *908* & Timber No. *18*, August 1939; without precise locality; *C. W. Yao*, Nos. *3777*, *4426* & *4873*, in 1939; ? without precise locality, *H. C. Chow*, No. *9340*.

SZECHUAN: Kuan-hsien, Mt. Tsing-cheng, *S. S. Chien*, Nos. *5619*, *5680* & 5746, May to October 1938; Nanchuan-hsien, Mount of the Golden Budha, *H. C. Yang*, No. *3156*, in 1939.

Distribution: Szechuan and Yunnan.

This species is easily recognised by the glabrous thick-coriaceous leaves, by the pubescent inflorescence, and by the glabrous lenticellate branchlets. It is confined to Western Szechuan and Southern Yunnan. In Western Szechuan it is not uncommon and on Mount Omei it has been found occasionally from 1300 to 1800 metres above sea level. W. P. Fang.

Fig. 1, a pistillate flowering branch (natural size); 2, a staminate flowering branch (natural size); 3, a fruiting spike (natural size); 4, pistillate flowers (enlarged 8 times); 5, a staminate flower (enlarged 10 times).

Lithocarpus Henryi, (Seemen) Rehder et Wilson in Sargent, Pl. Wilson, III (1917), 209.

Quercus Henryi, Seemen in Engler, Bot. Jahrb. XXIII, Beibl. No. 57, (1897), 50; XXIX (1900), 294.

Quercus spicata, Franchet (non Smith) in Journ. de Bot XIII (1899), 155, quoad specimen e Szechuan orientali.— Skan in Journ. Linn. Soc. XXVI (1899), 521, quoad specimen e Hupeh et Szechuan.

Pasania Henryi Schottky in Engler, Bot. Jahrb. XLVII (1912), 665.

MOUNT OMEI: without precise locality, *H. C. Chow*, No. 9510, in 1938; without precise locality, *C. W. Yao*, No. 5065, in 1939; south-west of Mount Omei, Opien-hsien, *S. N. Hsu*, No, 72, in 1937.

Distribution: Hupeh, Szechuan and Yunnan.

This species hitherto has been reported only from Western Hupeh and Eastern Szechuan. It is, therefore, of great interest to record its occurrence on Mount Omei. It seems near to *Lithocarpus viridis* Rehder & Wilson, but may be distinguished by its thinner oblong-lanceolate leaves, with the veins forming a more or less distinct reticulation on the lower surface and by its depressed globose acorns with shallow saucer-shaped cups. . . . . W. P. Fang.

圖版一百一十九

綠葉石櫟

殼斗科

喬木高十五公尺，稀達二十公尺；樹皮灰色或深灰色，縱裂； 小枝圓形而無毛，當年生枝綠色，多年生之枝灰色或深灰色， 具顯著之卵形皮孔；冬芽卵圓形，苞片覆瓦狀排列，卵形或銳尖形，外面被灰色細毛，或近於光滑，內面無毛。 葉宿存，厚革質，無毛，長圓狀橢圓形或披針形，稀為長卵形或長圓倒卵形，長九至十四公分，寬三至五公分半， 先端銳尖或漸尖而有短尖尾，基部闊楔形或楔形且向下延伸，全緣而微反捲， 表面亮綠色，背面灰綠色或黃綠色，中脈兩面隆起，側脈十三至十五對，在表面模糊，在背面顯著；葉柄長一公分半至三公分， 圓形，無毛，基部粗壯。大小蕊花同株；小蕊花生於長九至十一公分直立且被細毛之複葇荑花序上；花被五或六裂，裂片銳尖三角形，長一公厘至一公厘半， 外面被少許之白色柔毛，內面被濃密之白色柔毛， 小蕊十本，黃色或紫黃色，長四公厘，常彎曲，花藥呈亞圓球形，二室，花絲纖細而無毛，子房不發育；大蕊花二三枚生於一被細毛之總苞中， 着生於一長五至十公分具細毛而頂生之直立葇荑花序，花被大部為總苞所蓋被，裂片先端銳尖， 被細毛，花柱三，粗壯，柱頭生於頂端。果為圓錐形堅果， 次年成熟，下半部為一杯狀總苞所包被，鱗片鈍形，集心排列，被灰色細毛。

此種產於峨眉山之蛇倒退，大坪，遇仙寺，九老洞及息心所，海拔一千四百公尺至一八百七十餘公尺之森林中。五六月開花，次年果始成熟。

此種分佈於四川及雲南兩省。

此種之特徵，在其無毛而厚革質之葉，被細毛之花序， 及其光滑無毛而具皮孔之小枝。僅產於四川西部及雲南南部。在川西甚普遍。峨眉山則僅山之中部產之。

圖解： 1.大蕊花枝（原大）； 2.小蕊花枝（原大）； 3.果穗（原大）；4.大蕊花（放大五倍）；5.小蕊花（放大十倍）

亨氏石櫟

此種產於峨眉山及峨眉山西南之峨邊縣。

此種原產鄂西與川東，峨眉山近亦有此種之發現，實一極有趣味之事。 此種似與綠葉石櫟相近。所不同者，在其薄而長圓披針形之葉，背面有網狀葉脈， 以及其淺杯狀之殼斗具扁球形之橡實。



119. *Lithocarpus viridis* (Schottky) Rehder et Wilson

Plate 120.

LITHOCARPUS GLABRA (Thunberg) Nakai, var. SZECHUANICA Fang, var. nov.

Fagaceae.

Lithocarpus glabra (Thunberg) Nakai in Cat. Sem. Hort. Tokyo (1916), 8; (1920), 31.— Rehder in L. H. Bailey, Standard. Cycl. Hort. (1917), 3569.— Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 31.

Quercus glabra, Thunberg, Fl. Jap. (1784), 175.

Quercus thalassica, Hance in Hooker, Kew Journ. I (1849), 176.

Pasania glabra, Oersted in Vidensk. Meddel, Nat. For. Kjoebenhaven, XVIII (1866), 83.— Rehder in L. H. Bailey Standard Cycl. Hort. (1917), 2479.

Pasania thalassia, Oersted in Vidensk. Meddel, Nat. For, Kjoebenhaven XVII (1866), 83.

Lithocarpus thalassica, Rehder in L. H. Bailey Standard Cycl. Hort. (1917), 3369.

This species is fairly common in Chekiang and Fukien provinces. Westward, it has been reported only as far as Hunan and eastern Kweichow.

Lithocarpus glabra (Thunberg) Nakai, var. **szechuanica** Fang, var. nov.

A type differt glandis cupulibus, fere inclusibis, bracteis triangulo-lanceolatis, disparatis.

Tree 7-8 metres high; bark dark grey, slightly fissured; branchlets slender, terete, those of the current year yellow-pubescent, those of more than one year old brownish-grey or dark brown, sparsely pubescent. Leaves persistent, coriaceous, obovate-oblong or elliptical-oblong, 7-9 cm. long, 2.5-36 cm. broad, acute with abruptly acumen on the apex, cuneate or broadly cuneate at the base, entire on the margin, shiny green and glabrous above, whitish green and grey-tomentulose below, midrib elevated on both surfaces, primary veins 9-11 pairs, obsolete above, conspicuous below; petioles cylindrical, 6-8 mm. long, pubesent. Unopened staminate flowers have been found in terminal or axillary erect yellowish-pubescent catkins, 6-9 cm. long; pistillate flowers not found. Fruit matured the second year, acorn depressed-ovoid, shiny yellow, glabrous, 1 cm. long, 1.2 cm. broad, about four-fifth enclosed by the cup, cups grey-pubescent, covered with triangular-lanceolate scales.

OMEI-HSIEN: second Mount Omei, at the side of forest, tree 7-8 metres high, leaves shiny green and glabrous above, light green and with hairs below, acorn green, cups with light scales, rare, *T. C. Lee*, No. *4751*, August 30, 1930.

This variety differs from the type species in having an acorn that is almost enclosed by the cup, and in having scales which are triangular-lanoeolate and scattered . . . . W. P. Fang.

Fig. a leafy, fruiting and staminate flowering branch (natural size).

圖版一百二十

川石櫟 新變種

殼斗科

石櫟

此種在浙江福建兩省甚普遍。西向分佈僅達湖南及貴州東部。

川石櫟 新變種

喬木高七至八公尺；樹皮黑灰色，微縱裂；小枝細圓，當年生枝被黃色細毛，多年生枝灰褐色或深褐色，被稀疏細毛。葉宿存，革質，倒卵狀長圓形或橢圓狀長圓形，長七至九公分，寬二公分半至三公分六，先端突尖具短尖尾，基部楔形或廣楔形，全緣，葉表面亮綠色，無毛，葉背面淺綠色而具稀疏之灰色細毛，中脈在兩面皆隆起，側脈九至十一對，在葉表面微顯，在葉背面顯明；葉柄圓柱形，長六至八公厘，被細毛。未開之小蕊花着生於頂生或腋生直立被黃色細毛之葇荑花序，長六至九公分，大蕊花未見。果實兩年成熟，橡實爲上下扁之卵圓形，亮黃色，無毛，長一公分，寬一公分二厘，約五分之四爲殼斗所包被，殼斗被灰色細毛，被有三角狀披針形之鱗片。

此變種產於峨眉縣之二峨山。

此變種不同於石櫟之處，在其橡實幾全包被於殼斗，及有三角狀披針形而散生之鱗片。

圖解：葉果與小蕊花之枝（原大）。



120. Lithocarpus glabra (Thunberg) Nakai var. Szechuanica Fang.

Plate 121.

LITHOCARPUS BRUNNEA Rehder.

Fagaceae.

Lithocarpus brunnea, Rehder in Journ. Arn. Arb. XI (1930), 156.

Pasania brunnea Chun in Hu & Chun, Icon. Pl. Sin. IV (1935), 2, t. 152.

Tree 15 rarely up to 20 metres high; bark dark grey, rough; branchlets slender, terete or slightly angulate, grey or blackish grey, sparsely pubescent; winter-buds axillary, small, globose. Leaves alternate, evergreen, coriaceous, elliptic-ovate or elliptic-oblong, 7-12 cm. long, 2.5-4.8 cm. broad, shortly acuminate or acute with abruptly narrowed acumen at the apex, broadly cuneate or cuneate, and usually decurrent at the base, entire on the margin, upper surface green, glabrous, lower surface pale grey, tomentulose, covered with very thin, grey indumentum, looks glabrous, midrib flat above, elevated below, primary veins 6-9 pairs, divergent at an angle of 30° from the midrib, obsolete above, elevated below, secondary veins obsolete; petioles 2-2.5 cm. long, flat above, covered with thin grey indumentum. Flowers unknown. Fruiting inflorescences slender, erect, 6-12 cm. long, rhachis tomentulose, acorns cup-shaped, 5 mm. high, 8-10 mm. broad, usually 3 confluented, occasionally 1 or 2 of them obsolete, bracts densely imbricate, obtuse, yellow or greyish-pubescent, nuts (glands) ovoid-conical, 7-8 mm. long and broad, brown or yellow-brown, about one-third or one-half embraced by the acorn.

NORTHEAST OF MOUNT OMEI: Lo-shan-hsien (formerly known as *Kia-ting-fu*), Wu-yu-ssu alt. 450 m., in forests, tree 20 metres high, *W. P. Fang*, No. *2390* (type in Herb. Arn. Arb.; cotype in Herb. Sci. Soc. China), July 28, 1928; same locality, in forests, tree 15 metres high, abundant, *W. P. Fang*, No. *12481*, July 24, 1938.

This is a very distinct species which may be distinguished from all the known species of this genus by the small elliptic leaves which have a flat midrib above, and secondary veins that are obsolete on the lower surface, and by the small brown nuts, only one-third or one-half embraced by the cups and occuring in slender fruiting inflorescences. It is very rare and so far we have found it only at the type-locality. . . . . W. P. Fang

Fig. 1, a fruiting branch (natural size); 2 & 3, nuts (enlarged 2 times).

圖版一百二十一

褐果石櫟　別名：褐色桐

殼斗科

喬木高十五公尺，稀達二十公尺；樹皮黑灰色，粗糙；小枝細圓或稍有稜，灰色或黑灰色，被有稀疏之細毛；冬芽腋生而小，呈圓球形。葉互生，常綠，革質，橢圓狀卵形或橢圓狀長圓形，長七至十二公分，寬二公分半至四公分八公厘，先端短尖或銳尖，並具突狹之尖尾，基部寬楔形或楔形而常向下延伸，全緣，表面綠色，無毛，背面蒼灰色，微被短絨毛而蓋以灰色極薄之毛狀附着物，狀似無毛，中脈在葉表面扁平，在背面隆起，側脈六至九對與中脈成三十度之角而分出，在葉表面不顯著，在葉背面隆起，小脈不顯著；葉柄長二至二公分半，上面扁平，蓋以薄而灰色之毛狀附着物。花之特性尚不知。果序細而圓，長六至十二公分，主軸微被細毛，殼斗杯狀，高五公厘，寬八至十公厘，常三枚合生，其中一或二枚常有不發育，苞片排列成密覆瓦狀，鈍形，被黃色或淡灰色之毛。堅果爲卵圓狀圓錐形，長七至八公厘，褐色或黃褐色，約有三分之一或二分之一爲殼斗所包被。

產於峨眉山東北之樂山縣烏尤寺附近森林中。

本種易與此屬中已知之種類區別者，在其葉表面之中脈及背面之小脈不發育，小而褐色之堅果，備有全長三分之一或二分之一部爲杯狀殼斗所包被，且生於細果序上。此種分佈極窄，迄今吾人僅知其原產地產之。

圖解：　1. 果枝（原大）；2 及 3，堅果（放大二倍）。



121. *Lithocarpus brunnea* Rehder

Plate 122.

QUERCUS ENGLERIANA Seemen.

Fagaceae.

Quercus Engleriana Seemen in Engler, Bot. Jahrb. XXIII. Beibl. No. 57 (1897), 47; XXIX (1900), 291.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 512.— Koidzumi in Icon. Pl. Koisikav. I (1912), 111. t. 56.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 220.— Chun, Chin. Econ. Trees, (1921), 104. Rehder, Manual Cult. Trees & Shrubs (1927), 173.

Quercus obscura Seemen in Engler, Bot. Jahrb. XXIII. Beibl. No. 57 (1897), 49.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 519.

Quercus sutchuenensis Franchet in Journ. de Bot. XIII (1899) 512.

Evergreen tree about 10 metres high, bark brown or dark grey, slightly fissured; branchlets terete, those current year ones densely yellowish-tomentose at first and soon becoming glabrescent, those more than one year old glabrous, purplish brown or deep grey, with numerous, conspicuous ovate lenticels; winter-buds terminal or axillary, ovoid or conical-ovoid, 6 mm. long, brown, scales ovate, numerous, imbricate, yellowish-pubescent outside, especially near the apex, bracts purplish brown, oblanceolate or linear-lanceolate, 14 mm. long, grey-tomentose on the outer surface near the apex. Leaves alternate, coriaceous, persistent in the winter and falling away in the spring before the young leaves developing, ovate, ovate-oblong, rarely obovate, 9-15 cm. long, 4-6.5 cm. broad, acuminate on the apex, rounded or broadly cuneate at the base, serrate above the middle of the blade, with sharp spiny appressed teeth, upper surface shiny deep green, grey-tomentose while young and soon becoming glabrous, lower surface pale green or yellowish green, densely yellowish-tomentose while young and then becoming glabrous, midrib conspicuous above, prominent below, primary veins 9-15 pairs, ending in the teeth, just showing above, prominent below; petioles stout, 1-2.5 cm. long, yellowish-tomentose while young and then becoming glabrous. Flowers unisexual, monoecious, staminate flowers in pendulous pubescent catkins 10-15 cm. long, from the lower part of young branchlets or from the leafless old branchlets, bracts ovate, densely greyish pilose outside near the apex, perianth 5-lobed, lobes ovate, 2 mm. long, sparsely pubescent on both sides, ciliate on the margin, stamens 5, longer than the perianth, anthers ovoid, 2-celled, filaments slender, glabrous, pistillate flowers usually 3 on a short stalk, perianth pubescent, ovary inferior. styles 3 or 4, widely spreading or slightly recurved. Fruit an ovoid acorn, 1-2 cm. long, matured in one season, about one-third to one-half enclosed by the cupules, which are covered outside with glabrous obtuse scales.

MOUNT OMEI: Ta-ping, alt. 1400 m., small tree 2 metres high, young fruits brownish, *W. P. Fang*, No. *17035*, June 23, 1941; Hua-yen-ting, alt. 1950 m., in woods, tree 9 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. *1889*, May 6, 1940; Tsuan-tien-po, alt. 2000 m., in thickets, small tree 3 metres high, bark greyish-black, flowers yellowish, rare, *C.L. Sun*, No. *281*, May, 19, 1939; southwest of Mount Omei, Opien-hsien, Yen-king-chi, *W. C. Cheng*, No. *6180*, in 1936.

SZECHUAN: without precise locality, *K. L. Chu*, Nos. *1313*, *1402* & *1405*, in 1934.

SIKANG: Tien-chuan-hsien, *K.L. Chu*, Nos. *2469* & *2516*, in 1936.

Distribution: Hupeh, Szechuan and Sikang.

This is the first time that this species has been recorded from Mount Omei, where it is very rare. It is easily recognised by the ovate leaves which are tomentose while young but soon become glabrous. . . . . W. P. Fang.

Fig. 1, a staminate flowering branch (natural size); 2, a young flowering branch with staminate catkins and young leaves (natural size); 3, a pistillate flowering branch (natural size); 4, a fruiting branch (natural size); 5, a front-view of a staminate flower (enlarged 10 times); 6, a back-view of a staminate flower (enlarged 10 times).

圖版一百二十二

恩氏櫟　俗名：小青剛

殼斗科

常綠喬木，高約十公尺，樹皮深褐色或深灰色，微縱裂；小枝圓形，當年生枝初被濃密之黃色細毛，旋即變爲光滑無毛，多年生之枝光滑無毛，紫褐色或深灰色，具多數顯明之卵形皮孔；冬芽頂生或腋生，卵圓形或圓錐狀卵圓形，長六公厘，褐色，鱗片卵形，多數，覆瓦狀排列，外面有黃色細毛，近先端處尤多，苞片紫褐色，倒披針形或線狀披針形，長十四公厘，外面近於先端處被灰色細毛。葉互生，革質，冬季常綠，迨至翌春幼葉發出之先始行脫落，卵形或卵狀長圓形，稀爲倒卵形，長九至十五公分，寬四至六公分半，先端漸尖，基部圓形或廣楔形，葉片邊緣中部以上具密而尖銳之鋸齒，表面深亮綠色，幼時被灰色細毛，旋即變爲光滑無毛，背面淡綠色或黃綠色，幼時被濃密之黃色細毛，漸長卽變爲無毛，中脈在葉表面顯明，在葉背面突出，側脈九至十五對，末端止於齒尖，在葉表面顯著，在葉背面則突出；葉柄粗壯，長一至二公分半，幼時被黃色細毛，以後毛落而光滑。花五月開放，單性，大小蕊花同株，小蕊花生於長十至十五公分下垂而被細毛之柔荑花序上，由幼小枝之下部或無葉之老枝上發出，苞片卵形，表面近先端部分被濃密之灰色細毛，花被五裂，裂片卵形，長二公厘，兩面皆被稀疏之細毛，邊緣有纖毛，小蕊五本，較花被爲長，花藥卵圓形，二室，花絲細而無毛，大蕊花常三枚生於一短梗上，花被被毛，子房下位，花柱三或四枚，開展或微反捲。果爲卵圓形之橡實，長一至二公分，一季成熟，約有全長三分之一至二分之一爲殼斗所包被。殼斗外具無毛針形之鱗片。

此種產於峨眉山之大坪，華嚴頂，及鑽天坡海拔一千四百至二千公尺之森林中。峨眉山西北之榮經縣亦產之。

此種分佈於湖北四川及西康三省。

此種於峨眉山發現，尚爲首次，且爲數極少。此種之區別，在其卵形之葉幼時有淺毛，漸老則變爲無毛。

圖解：1. 着小蕊花之枝（原大）；2. 幼嫩之小蕊花枝及嫩葉（原大）；3. 着大蕊花之枝（原大）；4. 着果之枝（原大）；5. 小蕊花之正面（放大十倍）；6. 小蕊花之背面（放大十倍）。



122. *Quercus Engleriana* Seemen



Plate 123.

QUERCUS SERRATA Thunberg.

Fagaceae.

Quercus serrata Thunberg (non Siebold et Zuccarini), Fl, Jap. (1784), 176.— Siebold et Zuccarini in Abh. Akad. Muench. IV. pt. III (1846), 226 (Fl. Jap. Fam. Nat. II. 102).— Blume, Mus. Bot. Lugd.-Bat. I (1849-51); 296.— A. De Candolle, Prodr. XVI, pt. 2 (1864), 80.— Hance in Journ. Bot. XIII (1871), 8.— Brandis, Forest. Brit. Ind (1874), 488; Ind. Trees (1906), 626, fig. 192.— Franchet et Savatier, Enum. Pl. Jap. I (1875), 447.— Franchet in mem. Soc. Sci. Nat. Cherbourg. XXIV (1884), 254.— Debeaux in Act. Soc. Linn. Bordeaux, XXXI (1876), 362 (Fl. Tchefou, 128).— Bretschneider, Chinese Silkworm Trees, (1881), 4.— Forbes in Journ. Bot. XXII (1884), 86.— Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII. (1884), 85 (Pl. David. I. 275); in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254.— Wenzig in Jahrb. Bot. Gart. Berlin, IV (1886), 221.—Hooker, f., Fl. Brit. Ind. V (1888), 601.— Kanitz in Noven. Gyujt. Ered. Szechenys, II (1891), 842. (Pl. Enum. 57); in Wiss. Ergeb. Reise Szechenyi, II (1891), 731.— Shirai in Tokyo Bot. Mag. IX (1895), 412, t. 7, fig. 9.— Faber in Denkschr. Entwickel. Kiautschou (1898), 29.— Skan in Journ. Linn. Soc. Bot, XXVI (1899), 510.— Shirasawa, Icon. Ess. For. Jap. I (1900), t. 26, fig. 1-12.— Komarov in Act. Hort. Petrop. XXII (1903), 74 (Fl Mansh. II).—Seemen in Engler, Bot. Jahrb. XXXIV. beibl. LXXV Bot. (1904), 28.— Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 252.— Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 208 (Fl. Kor. II).— Dunn et Tutcher in Kew Bull. Misc. Inform. a. ser. X (1912), 253 (Fl. Kwangtung & Hongk.).— Matsumura, Ind. Pl. Jap. II. pt. 2 (1913), 29.— Leveille, Fl. Kouy-Tcheou (1914), 123.— Rehder et Wilson in Sargent. Pl. Wilson. III (1916), 217.— Loesener in Bot. Centralbl. Beih. XXXVII. abt. II (1919), 108.— Bailey, Gent. Herb. I (1920), 18.— Cowdry in Journ. N. China Branch. R. As. Soc. LIII (1922), 174 (Pl. Peitaiho).— Hers in Journ. N. China Branch. R. As. Soc. LIII (1922), 114; Liste Ess. Lign. Honan, (1923) 24.— Rehder in Journ. Arn. Arb. IV (1923), 161; Manual Cult. Trees & Shrubs (1927), 182.

Quercus glandulifera Blume, Mus. Bot. Lugd.-Bat. I (1850), 295.— Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 104.— A. De Candolle, Prodr. XVI pt. 2 (1864), 40.— Moore in Journ. Bot. XIII (1875), 231.— Franchet et Savatier, Enum. Pl. Jap. I (1876), 447.— Forbes in Journ. Bot. XXII (1884), 86.— Franchet in Nouv. Arch. Mus. Paris, ser, 2. VII (1884), 84 (Pl. David I. 274).— Wenzig in Jahrb. Bot. Gart. Berlin, IV (1886), 230.— Sargent in Garden and Forest, VI (1893), 385; Forest Fl. Jap. (1894), 68.— Shirai in Tokyo Bot. Mag. IX (1895), 410, t. 7, fig. 1.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 514.— Seemen in Engler Bot. Jahrb. XXIX (1900), 209.— Shirasawa, Icon, Ess. For. Jap. I (1900), 60. t. 26, fig. 13-24.— Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII(1910), 251.— Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 207 (Pl. For. II); Tokyo Bot. Mag. XXIX (1915), 59.— Matsumura, Ind. Pl. Jap. II. pt. 2 (1913), 27.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916). 312.— Loesener in Bot. Jahrb. Beih. Bot. Centralbl. XXXVII. abt. 11. (1919), 108.— Bailey, Gent. Herb. I (1920), 18.— Hers in Journ. N. China Branch Roy. As. Soc. LIII (1922), 114; Liste Ess. Lign. Houan, (1922), 24.— Rehder, Manual Cult. Trees & Shrubs (1927). 182.

Deciduous tree usually 3 to 8 metres high, rarely up to 25 metres high; bark grey or dark grey, fissured and peeling off as thin flakes; branchlets slender, those of the current year brownish purple, pubescent at first and soon becoming glabrescent, those more than one year old grey, with conspicuous small rounded lenticels; winter-buds terminal or axillary, conical or conical-ovoid, 5-7 mm. long, 2-4 mm. in diameter, scales brown, numerous, imbricate, ovate, sparsely puberulous outside, ciliate on the margin. Leaves alternate, coriaceous, obovate-oblong, oblanceolate or oblong-obovate, 11-18 cm. long, 4-8 cm. broad, acuminate on the apex, cuneate or broadly cuneate at the base, wavy on the margin with appressed gland-tipped teeth, upper surface bright green, pubescent while young and changing to glabrous later, lower surface pale green with appressed silky-pubescence wile young and changing to glabrous or slightly glaucous later, midrib conspicuous above, prominent below, primray veins 10-14 pairs, ending in teeth, slightly conspicuous above, distinct below; petioles 1-3 cm. long, terete, slightly dilated at base, silky-pubescent while young and changing to glabrous later. Flowers unisexual, monoecious, opening at the same time as leaves, staminate flowers in pendulous pubescent slender catkins 12-15 cm. long, with 2 purplish brown oblanceolate bracts 1.2 cm. long, from the lower part of one-year old branchlets, perianth usually 6-lobed, lobes ovate, densely greyish tomentose outtside, stamens 6 to 8, exserted, anthers purple, 2-celled, filaments slender, glabrous. Pistillate flowers in the axil of leaf from upper part of young branchlet, usually 2 rarely 1 or 3 to 5 on an erect, pubescent peduncle 8-15 mm. long, with 2 purplish brown oblanceolate bracts 8-10 cm. long, greyish pubescent on the outer surface, perianth-lobes densely greyish-pubescent outside, ovary inferior. 3-celled, styles 3, spreading. Fruit a brownish oblong-ovoid acorn, pubescent near the apex, 20-24 mm. long, 8-10 mm. in diameter, with persistent styles, ripening in one season, usually 1 rarely 2 or 3 on a stout stalk 1-2 cm. long, cupules shallow, covered densely outside with depressed small greyish pubescent triangular scales, enclosed about one-fifth to one-fourth of the acorn.

MOUNT OMEI: near Pao-ning-ssu, alt. 450 m., small tree 4 metres high, *W. P. Fang*, No. *13162*, May 18, 1939; same locality, small tree 8 metres high, staminate flowers greenish or greenish yellow in catkins, pistillate flowers with 2 purplish bracts and reddish-brown or purple styles, 4 or 8 on a short stalk, *T. C. Lee*, Nos. *5344B*, *5345*, *5347*, *5348B*, *5349B* & *5350B*, March 27 to April 1, 1940; same locality, small tree 5 metres high, young leaves silky-pubescent, staminate flowers in yellowish green catkins, pistillate flowers reddish-brown, 4 or 5 on a short stalk, *W. P. Fang*, Nos. *13982* & *13983*, April 3, 1940; same locality, tree 4 metres high, *T. C. Lee*, No *4783*, September 2,1940;

same locality, small tree 5 metres high, flowers yellowish, *W. P. Fang*, No. *16110*, April 3, 1941; same locality, small tree 8 metres high, bark grey, staminate flowers in catkins, *C. L. Chow*, Nos. *5651*, *5664*, *5702*, *5709*, *5756*, *5761* & *5800*, March 30 to April 7, 1942; Wan-kan, on slopes, tree 20 metres high, common, *W. P. Fang*, No. *14543*, June 15 1940: Wan-hsing-chuang, alt. 470 m., *H. C. Chow*, Nos. *8701*, *8702*, *8704* & *8706*, October 1938; Mo-erh-shih, alt. 470 m., shrub 3 metres high, *W. P. Fang*, No. *17383*, July 24 1940; Pao-kuo-ssu, alt. 500 m., in forests, small tree 8 metres high, leaves glaucous beneath, *W. P. Fang*, No. *14632*, July 2, 1940; Fu-hu-ssu, alt. 600 m., small tree 5 metres high, fruits a brownish acorn, *W. P. Fang*, No. *15487*, November 20, 1940; Ching-yin-ko, alt. 900 m,, small tree 8 metres high, *T. C. Lee*, No. *3042*, July 29, 1940; Ta-o-ssu, alt. 1100 m., in thickets, shrub 4 metres high, *C. L. Sun*, No. *20*, May, 2, 1939; same locality, in forests, small tree 6 metres high, *T. C. Lee*, *3041*, July 29, 1940; Kuang-fu-ssu, alt. 1000 m., *W. P. Fang*, No. *17439*, July 28, 1941; Chang-lao-ping, alt. 1600 m., in forests, small tree 5 metres high, *C. L. Sun*, No. *1918*, May 8, 1940; northwest of Mount Omei, Yung-king-hsien, in thickets, shrub 4 metres high, *C. L. Sun*, No. *1259*, September 12, 1939; same locality, in thickets, small tree 5 metres high, *C. L. Sun*, No. *1354*, September 18, 1939; southwest of Mount, Opien-hsien, *W. C. Cheng*, No. *5977*, in 1936; same locality, in forsest, small tree 4 metres high, *C. L. Sun*, No. *999*, August 16, 1939; without precise locality, *C. W. Yao*, Nos. *2900*, *3581*, *4590*, *5035*, *5069* & *5170*, from 1938 to 1939; without precinse locality, *H. C. Chow*, No. *9519*, in 1938.

CHEKIANG: Tien-mu-shan, *S. S. Chien*, No. *567*, August 1929; Sui-chang-hsien, *S. Chen*, Nos. *1174* & *1214*, April 29, 1933; Sui-an-hsien, *S. Chen*, No. *2403*, October 26, 1933.

SZECHUAN: Kuan-hsien, *S. S. Chien*, Nos. *5674*, *5718* & *5741*, April to October 1936: Chengtu, tree 12 metres high, *W. P. Fang*, No. *13344*, April 11, 1939.

SIKANG: Tien-chuan-hsien, on slopes, tree 8 metres high, *F. C. Tai* & *C. M. Teng*, No. *4173*, July 16, 1939; same locality, alt. 2100 m., on slopes, small tree 4 metres high, *F. C. Tai* & *C. M. Teng*, No. 5188, September 12, 1939.

Distribution: Shantung, Honan, Chekiang, Kiangsu, Hupeh, Hunan, Szechuan, Kweichow, Yunnan; Corea and Japan.

This is a very variable species and can be distinguished from other Chinese species only by the leaves with their glandular-tipped teeth, which are usually forwarding and slightly recurved. It occurs very commonly known as "Ching-kong" and is used commonly as fire-wood in various provinces of China .... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flower (enlarged 20 times); 4, a front-view of staminate flower (enlarged 20 times); 5, a back-view of staminate flower (enlarged 20 times).

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枹樹　俗名：青剛樹。

殼斗科

落葉喬木高三至八公尺，稀達二十五公尺；樹皮灰色或深灰色，縱裂而成薄片狀脫落；小枝纖細，當年生枝紫褐色，初被細毛，旋即變爲光滑無毛，多年生之枝灰色，具顯著之小圓形皮孔；冬芽頂生或腋生，圓錐形或圓錐狀卵圓形，長五至七公厘，直徑二至四公厘，鱗片多數成褐色，卵狀，覆瓦狀排列，外面具稀疏之絨毛，邊緣具纖毛。葉互生，革質，倒卵狀長圓形，倒披針形或長圓倒卵形，長十一至十八公分，寬四至八公分，先端漸尖，基部楔形或廣楔形，邊緣波狀，具密接之腺頭鋸齒，表面亮綠色，幼嫩時被絨毛，旋即變爲無毛，背面灰綠色，幼時密被絲狀絨毛，以後變爲無毛或微被蠟粉，中肋在葉表面顯明，在葉背面突出，側脈十至十四對，末端止於齒尖，在葉表面微顯，在葉背面較明晰；葉柄圓形，長一至三公分，基部微擴張，幼嫩時被絲狀柔毛，其後變爲無毛。花單性，大小蕊花同株，與葉同時發出，小蕊花生於長十二至十五公分被毛而下垂之葇荑花序上，具二紫褐色倒披針形之苞片長十二公厘，由多年生小枝之下部發出，花被常六裂，裂片卵形，外面被濃密之灰色絨毛，小蕊六至八本，伸出花被外，花藥紫色，二室，花絲細而無毛，大蕊花由幼枝上部之葉腋間發出，常二枚稀一或三至五枚生於直立被毛之花梗上，長八至十五公厘，苞片二枚，紫褐色倒披針形，長八至十公分，外面被灰色絨毛，花被裂片之外面被濃密之灰色絨毛，子房下位，三室，花柱三，向外平伸。果爲褐色長卵圓形之橡實，近先端被毛，長二十至二十四公厘，直徑八至十公厘，具宿存之花柱，一季內成熟，常一枚稀二或三枚生於長一至二分之粗壯果梗上，殼斗淺形，外面密被以具灰色毛成三角形之小鱗片，包被橡實約五分之一至四分之一。

此種產於峨眉山之山麓，自海拔四百五十公尺至一千公尺左右，如保寧寺，報國寺及大峨寺等處，則隨地皆是。三四月開花，九月果可成熟。

此種分佈於山東，河南，浙江，江蘇，湖北，湖南，四川，貴州，雲南等省。日本及朝鮮亦產之。

此種之變異極大，其與此屬中其他中國種之區別，僅以其葉具腺頭之鋸齒，齒常向前而稍反捲。此種通稱爲"青剛"各省皆用作燃料。

圖解：1.花枝（原大）；2.果枝（原大）；3.大蕊花（放大二十倍）；4.小蕊花之正面觀（放大二十倍）；5.小蕊花之背面觀（放大二十倍）。



123. *Quercus serrata* Thunberg

Plate 124.

QUERCUS ACUTISSIMA Carruthers.

Fagaceae.

Quercus acutissima Carruthers in Journ. Linn. Soc. Bot. VI(1862), 33.— Nakai in Tokyo Bot. Mag. XXXIX (1915), 57.— Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 34.

Quercus serrata Siebold et Zuccarini (non Thunberg) in Abh. Akad. Muench. IV. pt. 3 (1846)' 226 (Fl. Jap. Fam. Nat. II. 102)

Deciduous tree usually 10 metres rarely up to 20 metres high, bark grey or dark grey, fissured; branchlets slender, terete, those of the current-year ones grey-pubescent, with conspicuous scale-scars at the base; those more than one year old yellowish-green or yellowish-grey, glabrous or glabrescent, with sparsely ovate lenticels; winter-buds terminal or axillary, conical, scales brownish' ovate, imbricate, sparsely grey-pubescent outside, glabrous inside. Leaves lanceolate or oblong-lanceolate, 10-16 cm. long, 3.5-6 cm. broad, acuminate or caudate-acuminate on the apex, broadly cuneate or subrotund at the base, remotely serrate with appressed bristly teeth, upper surface shiny deep green, greenish tomentose while young and changing to glabrous later, lower surface yellowish green, pubescent, especially on the veins, while young, and changing to glabrous as the leaves develop; midrib conspicuous above, prominent below, primary veins 10-16 pairs, ending in the teeth, parallel, just showing above, conspicuous below; petioles slender, 1.5-3 cm. long, grey-pubescent while young, glabrous when matured. Flowers unisexual, monoecious, appearing with the developing leaves, staminate flowers yellowish green, in pendulous, pubescent slender catkins 6-9, rarely to 12, cm. long, 4 or 6 from the base of young branchlets or from the leafless old branchlets, perianth yellowish-green, 5-lobed, lobes ovate, 1 mm. long, grey-pubescent outside near the apex, stamens 4 or 6, longer than the perianth-lobes and exserted, anthers yellow or purplish-yellow, subglobose, 2-celled, filaments slender, glabrous, pistillate flowers 1-3 on a short stalk, in the axils of leaves from old branchlets, bracts densely pubescent, ovary inferior, 3-celled, styles 3-branched near the apex. Fruit a sessile, brownish, subglobose acorn, 20-25 mm. long, 15-18 mm. in diameter, matured the second year, about two-thirds enclosed by the cupules, which are covered outside with recurved or straight grey-pubescent, awl-shaped scales.

MOUNT OMEI: Wan-hsing-chuang, alt. 450 m., *H. C. Chow*, Nos. *8490*, *8771* & *9073*, October 1938; same locality, at side of rice-field, tree 12 metres high, young leaves yellowish green, pubescent on both surfaces, staminate flowers yellowish-green, in catkins, pistillate flowers solitary, with purple bracts and with yellowish styles, *T. C. Lee*, Nos. *5341A* & *5342A*, March 27, 1940; Pao-kuo-ssu, alt. 480 m., tree 10 metres high, young leaves yellowish-green, *W. P. Fang*, No. *13923*, March 12, 1940; Lung-men tung, alt. 540 m., tree 20 metres high, staminate flowers yellowish-green, *C. L. Chow*, *5572*, March 29, 1942; without precise locality, *C. W. Yao*, No. *5233*, in 1939.

SZECHUAN: Chengtu, in forests, tree 14 metres high, flowers pale yellow, *S. S. Chien*, No. *5171*, April 8, 1936; same locality, in forests, tree 10 metres high, *S. S. Chien*, No. *5324*, May 16, 1936; same locality, Hua-hsi-pa, near a tomb, tree 8 metres high, staminate flowers yellowish, rare, *W. P. Fang*, No. *13245* & *13284*, March 30, 1839; Opien-hsien, *S. N. Hsu*, No. 7, in 1937.

CHEKIANG: Tung-lu-hsien, *S. Chen*, No. *1895*, August 29, 1933.

KIANGSU: near Pao-hua-shan, *W. C. Cheng*, No. 5811, October 6, 1934.

Distribtion: Liaoning, Shantung, Kansu, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Kweichow and Kwangtung.

This species is very widely distributed in various provinces of China, but this is the first time it has been found on Mount Omei, where it was discovered at the foot of the mountain. It is near *Quercus variabilis* Blume, but differs distinctly from that species in possessing leaves which are glabrous on the lower surfaces. . . . . W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, a side-view of staminate flower (enlarged 10 times); 4, a front-view of staminate flower (enlarged 10 times); 5, an inflorescence of pistillate flowers (enlarged 15 times); 6, a pistillate flower (enlarged 20 times); 7, a fruit (natural size); 8, a portion of leaf to show the veination (enlarged 1.5 times);

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麻櫟　別名：櫟樹，柞樹

殼斗科

落葉喬木高十公尺，稀達二十公尺，樹皮灰色或深灰色，縱裂，小枝細圓，當年生枝被灰色細毛，基部有顯著之鱗芽痕跡，多年生枝黃綠色或黃色，光滑無毛或近於無毛，具稀疏之卵形皮孔；冬芽頂生或腋生，圓錐形，鱗片淡褐色，卵形，覆瓦狀排列，外面被疏稀之灰色細毛，內面無毛。葉披針形或長圓披針形，長十至十六公分，寬三公分半至六公分，先端漸尖或尾狀漸尖，基部廣楔形或微圓，鋸齒稀疏，齒尖銳利密接向前，表面深亮綠色，幼時被淡綠色柔毛，漸長則毛落而光滑，背面黃綠色，幼嫩時有毛，脈上尤多，葉漸長大即毛落而成光滑狀。中脈在葉表面顯明，在葉背面突出，側脈十至十六對，末端止於齒尖，平行，在葉表面顯明，在葉背面更顯著；葉柄細，長一公分半至三公分，幼時被灰色細毛，長成時毛落而光滑。花單性，三月開放，大小蕊花同株，與葉同時發出，小蕊花黃綠色，生於下垂被毛之細葇荑花序上，花序長六至九公分，稀達十二公分，有四或六花序同由幼枝基部或無葉之老枝上發出：花被黃綠色，五裂，裂片卵形，長一公厘，表面之先端被灰色細毛，小蕊四或五本，較花被裂片爲長，且伸出花被之外，花藥黃色或紫黃色，呈亞圓球形，二室，花絲細而無毛，大蕊花一或三枚生於短梗上，自老枝之葉腋間生出，苞片被濃密細毛，子房下位，三室，花柱近頂部分成三枝。果無梗，爲淡褐色亞圓球形之橡實，長二十至二十五公厘，直徑十五至十八公厘，兩年成熟，全長三分之二爲殼斗所包被，外被以反捲或直長之錐形鱗片，被灰色細毛。

本種產於峨眉山麓之萬行莊，報國寺，龍門洞海拔四五百公尺之森林中。

本種分佈於遼寧，山東，甘肅，浙江，江蘇，安徽，江西，湖北，湖南，四川，貴州及廣東等省。

此種在全國各省分佈極廣，在峨眉山之發見，尚爲首次，多產於峨眉山麓。其葉與栓皮櫟甚相近，所不同者，在其葉之背面無毛。

圖解：1．果枝（原大）；　2．花枝（原大）；　3．小蕊花之側面（放大十倍）；4．小蕊花之正面（放大十倍）；　5．大蕊花之花序（放大十五倍）；　6．大蕊花（放大二十倍）；7．果實（原大）；　8．葉之一部以示其脈（放大一倍半）。



124. *Quercus acutissima* Carruthers

Plate 125.

QUERCUS VARIABILIS Blume.

Fagaceae.

Quercus variabilis Blume, Mus. Bot. Lugd.-Bat. I (1850), 297.- A. De Candolle, Prodr. XVI, pt. 2 (1864), 80.- Sargent in Garden & Forest, VI (1893), 3?5; Forest Fl. Japan (1894), 6?.- Shirai in Tokyo Bot. Mag. IX (1895), 413, t. 7, fig. 3.- Shirasawa, Icon. Ess. For. Jap. I (1900), 51, t. 28, fig. 1-11.- Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 394 (Enum. Pl. Formosa.).- Nakai in Journ. Coll. Sci. Tokyo, XXXI (1911), 203 (Fl. Kor. II).- Leveille, Fl. Kouy-Tcheou, (1914), 129.- Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 219.- Bailey, Gent. Herb. I (1920), 18.- Hers in Journ. N. China Roy. As. Soc. LIII (1922), 114; Liste Ess. Lign. Honan (1922), 24.- Rehder in Journ. Arn. Arb. IV (1923), 161 (Lign. Pl. North. China).- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 34.

Quercus chinensis Bunge (non Abel) in Mem. Div. Sav. Acad. Sci. St. Petersb. II (1833), 135 (Enum. Pl. Chin. Bor. 61).- Turczaninow in Bull. Soc. Nat. Mouscou, X, No. VII (1837), 157.- Maximowicz in Mem. Div. Sav. Acad. Sci. St. Petersb. IX (1859), 477 (Ind. Fl. Pekin).- Bretschneider, Chinese Silkworm Trees, (1881), 6.

Quercus serrata Carruthers (non Thunberg) in Journ. Linn. Soc. VI (1862), 32.- Schottky in Engler, Bot. Jahrb. XLVII (1912), 638.- Nakai in Tokyo Bot. Mag. XXIX (1916), 57.- Koidzumi in Tokyo Bot. Mag. XXX (1916), 305.

Quercus Bungeana Forbes in Journ. Bot. XXII (1884), 83.- Franchet in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254; in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 86 (Pl. David. I. 275).- in Journ. de Bot. XIII (1899), 164.- Skan in Journ. Linn. Soc. XXVI (1899), 508.- Kanits in Noven. Gyujt. Ered. Szechenji, II (1891), 841 (Pl. Enum. 56); in Wiss. Ergeb. Reise Szechanyi, II (1891), 731.- Seemen in Engler, Bot. Jahrb. XXIX (1900), 291.- Leveille, Fl. Kouy-Tcheou (1914), 127.- Loesener in Engler, Bot. Centralbl. Beih. XXXVII, abt. II (1919), 108.

Quercus serrata, var. *a chinensis* Wenzig in Jahrb. Bot. Jart. Berlin, IV (1886), 221.- Matsumura, Ind. Pl. Jap. II, pt. 2, (1913), 29.

Quercus Bombyx tomentosa Hort. ex Kew Handlist, (1894), 201 (pro synon. Q. serratae Thunberg).

Deciduous tree usually 10 rarely up to 25 metres high, bark greyish, cork deeply fissured; branchlets stout, with numerous lenticels and with conspicuous scars of deciduous scales at the ends of each year growth, those of the current year yellowish grey, sparsely tomentose while young and changing to glabrous later, those of more than one year old brownish grey or dark brown, glabrous; winter-buds terminal or axillary, conical, scales brownish, ovate, imbricate, sparsely pubescent outside, glabrous inside, ciliate on the margin, bracts linear or oblanceolate, greyish tomentose outside, glabrous inside. Leaves coriaceous, oblong, oblong-lanceolate or oblong-ovate, 9-16 cm. long, 3-5.5 cm. broad, acuminate on the apex, broadly cuneate or rotund at the base, crenately serrate on the margin with sharp appressed bristles, upper surface at first puberulous, then deep green, glabrous, lower surface whitish tomentose, midrib conspicuous above, prominent below, lateral veins 17-19, parallel, ending in the teeth, just showing above, conspicuous below; petioles 3-4 cm. long, terete, at first yellowish pubescent and then changing to glabrous. Flowers unisexual, monoecious, staminate flowers in pendulous, pubescent slender spike, 8-12 cm. in length, from lower part of young branchlets, perianth 4-lobed, rarely 2-3-lobed, lobes ovate, 2 mm. long, whitish or grey tomentose on the outer surface, especially near the apex, stamens 6 rarely more, filaments short, anthers subglobose, 2-celled, pistillate flowers solitary, in axil of leaf from young branchlets, ovary 3-celled, styles 3, short, stigmatic on the inner side. Fruit a sessile, subovoid brown nut, 2.5 cm. long, 2 cm. in diameter, ripening the second year, about one-third to one-half enclosed by the cupule covered outside with grey-pubescent, awl-shaped or linear, recurved scales.

MOUNT OMEI: in the vicinity of Wan-hsing-chuang, alt. 470 m., on slopes, tree 10 metres high, staminate flowers green in long pendulous catkins, *T. C. Lee*, No. *5343* B, March 27, 1940; near Pao-kuo-ssu, alt. 500 m., at roadside, tree about 10 metres high, young leaves green and sparsely pubescent above and whitish tomentose beneath, staminate flowers greenish, in pendulous catkins, *W. P. Fang*, No. *13922*, March 19, 1940; southwest of Mount Omei, Opien-hsien, Lung-men-ku, *W. C. Cheng*, No. *6315*, July 1936.

This species is near *Quercus acutissima* Carruthers, but it is easily distinguished from that species by the whitish tomentose lower surface of the leaf. Its occurence is very common in China so far as it has been reported from Hopeh, Shansi, Shensi, Kansu, Shantung, Honan, Chekiang, Hupeh, Szechuan, Hunan, Kweichow and Yunnan...W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, aside-view of staminate flower (enlarged 10 times); 4, a back-view of a staminate flower (enlarged 10 times); 5, a front view of staminate flower (enlarged 10 times); 6, a pistillate flower (enlarged 10 times); 7, a portion of leaf to show the hairs at the lower surface (enlarged 5 times).

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栓皮櫟 別名：厚皮櫟，軟木櫟。

殼斗科

落葉喬木高十公尺，稀達二十五公尺；樹皮淡灰色，木栓深縱裂；小枝粗壯，具多數皮孔及顯著之芽鱗痕跡，當年生枝灰黃色，幼時被稀疏之細毛，後卽變爲無毛，多年生枝灰褐色或暗褐色，無毛；冬芽頂生或腋生，圓錐形，鱗片淡褐色，卵形，覆瓦狀排列，外面被稀疏之細毛，內面無毛，邊緣具纖毛，苞片線形或倒披針形，外面被淡灰色之柔毛，內面無毛。葉革質，長圓形，長圓披針形或長圓卵形，長九至十六公分，寬三公分至五公分半，先端漸尖，基部廣楔形或圓形，邊緣之鈍鋸齒具密接銳利之刺狀尖齒，葉之表面幼時微被細毛，旋卽變爲深綠色，無毛，背面被淡白色淺毛，中脈在葉表面顯明，在葉背面則突出，側脈十七至十九對，平行，末端止於齒尖，在葉表面微露，在葉背面則顯明；葉柄長三至四公分，圓形，初被黃色細毛，旋卽脫落。花單性，大小蕊花同株，小蕊花生於細而被毛且下垂之穗狀花序上，長八至十二公分，由幼枝下部生出，花被四裂，稀二至三裂，裂片卵形，長二公厘，外面被淡白色或灰色之細毛，在近先端處爲尤多，小蕊五本，稀更多，花絲短，花藥亞圓球形，二室，大蕊花單生，由幼枝之葉腋間發出，子房三室，花柱三，形短，柱頭生於花柱內側。果爲無柄亞卵圓形之褐色堅果，長二公分半，直徑二公分，次年成熟，全長約三分之一至二分之一被殼斗所包被；殼斗外面具灰色細毛之錐形或線形而反捲之鱗片。

此種產於峨眉山之萬行莊及報國寺等處，海拔四五百公尺左右之路旁或森林中。峨眉山西南之峨邊縣亦產之。三四月開花，次年果實始成熟。

此種與麻櫟極相近，所不同者，在其葉之背面被淡白色之柔毛。

此種分佈於河北，山西，陝西，甘肅，山東，河南，浙江，湖北，四川，湖南，貴州及雲南等省。

圖解：1. 果枝（原大）；2. 花枝（原大）；3. 小蕊花之側面（放大十倍）；4. 小蕊花之背面（放大十倍）；5. 小蕊花之正面（放大十倍）；6. 大蕊花（放大十倍）；7. 葉之一部放大以示其背面之毛（放大五倍）。



125. *Quercus variabilis* Blume



Plate 126.

QUERCUS GLAUCA Thunberg form Gracilis Rehder.

Fagaceae.

Quercus glauca Thunberg, Fl. Jap. (1784), 176.- Banks, Icon. Kaempfer. (1791), t. 17.- Siebold et Zuccarini in Abh. Akad. Munch. IV. pt. 3, (1846), 226 (Fl. Jap. Fam. Nat. II. 102) - Blume, Mus. Bot. Lugd.-Bat. I (1850), 802.- Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 115.- A. De Candolle, Prodr. XVI. pt. 2 (1864), 100.- Masters in Gard. Chron. n. ser. I (1874), 632.- Hance in Journ. Bot. XIII (1874), 363; XX (1882), 294.- Franchet et Savatier, Enum. Pl. Jap. I (1875), 448.- Forbes in Journ. Bot. XXII (1884), 86.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 86 (Pl. David. I. 276); in Journ. de Bot. XIII (1899), 159.- Wenzig in Jahrb. Bot. Gart. Berlin, IV, (1886), 233.- Hooker f., Fl. Brit. Ind. V (1888), 604.- King in Ann. Bot. Gard. Calcutta, II (1889), 29, t. 23.- Skan in Journ. Linn. Soc. XXVI (1889), 516.- Seemen in Engler, Bot. Jahrb. XXIX (1900), 293.- Shirasawa, Icon. Ess. For. Jap. I (1900); 66. t. 30, fig. 13-24.- Matsumura et Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 392 (Enum. Pl. Formos.).- Matsumura, Ind. Pl. Jap. II. pt. 2 (1912), 27, Leveille in Fl. Kouy-Tcheou (1914), 128.- Nakai in Tokyo Bot. Mag. XXIX (1915), 61.- Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 226.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 50.

Quercus annulata Smith in Rees, Cyclop. XXIX (1819), No. 22.- Miquel in Ann. Mus. Lugd.-Bat. I (1863-64); 114.- A. De Candolle, Prodr. XVI, pt. 2 (1864), 100.- Brandis, Forest Fl. Ind. (1874), 487, t. 68, exclud. synon. *Q semiserrata.*

Quercus Phullata Hamilton apud D. Don, Prodr. Fl. Nepal. (1825), 57.

Quercus laxiflora Lindley in Wallich, Cat. No. 2774 (1829), (nomen nudum).- A. De Candolle, Prodr. XVI. pt. 2 (1864), 108.

Quercus dentosa Lindley in Wallich, Cat. No. 2775 (1829) (nomen nudum).

Quercus glauca, var. *caesia* Blume, Mus. Bot. Lugd.-Bat. I (1850), 303.

Cyclobalanopsis glauca Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 70.- Schottky in Engler, Bot. Jahrb. XLVII (1912), 656.

Cyclobalanopsis annulata Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 70.

Quercus Vaniotii Leveille in Fedde, Repert. Nov. Spec. XII (1913), 364.

CHEKIANG: Hang-chow, *W. C. Cheng*, No. *41*, August 1929; without precise locality, *S. S. Chien*, Nos. *616* & *629*.

SZECHUAN: Nanchuan-hsien, *Y. C. Yang*, Nos. *3103* & *3133*; Kuan-hsien, Mount Tsing-cheng, *S. S. Chien*, No. *5791*, October 10, 1936.

SIKANG: Yen-pien-hsien, alt. 1500 m., *T. T. Yu*, No. *1671*, October 10, 1932.

Distribution: Chekiang, Kiangsu, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Yunnan, Fukien, Kwangtung.

This species is easily recognized by its coriaceous evergreen leaves which are elliptic-oblong or ovate-oblong and dentate only on the upper half and by the ovoid fruit only one-third enclosed by the cupules which are covered outside with concentric ring-like scales. It is very rare in Szechuan and we have not found on Mount Omei, although its occurence has been reported from various provinces south of the Yangtze-river...W. P. Fang.

Quercus glauca Thunberg, form **gracilis** Rehder et Wilson in Sargent, Pl. Wilson. III (1916) 228.- Rehder, Manual Cult. Trees & Shrubs, (1927), 165.

Evergreen tree usually 10 rarely up to 15 metres high, bark dark grey or brownish grey, smooth, branchlets slender, terete, those of current year greenish purple, glabrous, those more than one year old dark brown, with conspicuous ovate lenticels; winter-buds terminal or axillary, ovoid, scales ovate, imbricate, grey-pubescent on the outer surface. Leaves alternate, coriaceous, ovate-lanceolate or ovate-oblong, 5-9 cm. long, 2-2.5 cm. broad, acuminate on the apex, cuneate at base, serrate at the margin with the exception of the basal third which is entire, teeth sharp, appressed, upper surface shiny green, glabrescent, lower surface glaucous, sparsely pubescent, midrib slightly impressed above, prominent below, primary veins 12-14 pairs, just showing above, conspicuous below; petioles 1.5-2 cm. long, slender, glabrous. Flowers unisexual, dioecious, staminate flowers in pendulous catkins 5-12 cm. long, 1 or 3 from one bud, bracts triangular-ovate, caducous, sparsely pubescent on the outer surface, perianth 6-9-lobed, lobes acute, pubescent on the outer surface, stamens 6 or more, as long as the perianth-lobes, anthers yellow, 2-celled, filaments slender, glabrous, pistillate flowers solitary or 3 to 5 on a short spike, perianth pubescent, ovary inferior, 3-celled, styles 3, recurved. Fruit a short-stalked, conical-ovoid acorn, matured in one year, the lower half enclosed by the cup-shaped cupules which are covered outside with 4 concentric, ring-like, pubescent scales.

MOUNT OMEI: She-tao-tui, alt. 1300 m., in forests, small tree 5 metres high, bark yellowish brown, leaves ovate-oblong, green above, occasionally, glaucescent below, *T. C. Lee*, No. *2766*, July 12, 1940; Hsi-hsin-so, alt. 1600 m., small tree 5 metres high, young fruits greenish, *W. P. Fang*, No. *17055*, June 23, 1941; ? same locality, alt. 1600 m., in thickets, shrub 4-6 metres high, bark dark grey, flowers greenish, *C. L. Sun*, No. *1922*, May 8, 1940; ? north-east of Mount Omei, Lo-shan-hsien. Wu-yu-ssu, near the temple, under woods, small tree 8 metres high, rare, *W. P. Fang*, No. *12482*, July 24, 1938; south-west of Mount Omei, Opien-hsien, Yen-king-chi, *W. C. Cheng*, Nos. *6197* & *6410*, in 1936; without precise locality, *T. H. Tu*, No. *744*, in 1935.

SZECHUAN: Kuan-hsien, Mount Tsing-cheng, in forests, tree 20 metres high, bark dark grey, *S. S. Chien*, No. *5647*, May 24, 1936; same locality, in forests, tree 15 metres high, abundant, *W. P. Fang*, No. *12185*, April 10, 1938; without precise locality, *K. L. Chu*, Nos. *1391* & *1825*, in 1935.

Distribution: Hupeh and Szechuan.

This form differs from the type species in having smaller and narrower leaves which are ovate-oblong or ovate-lanceolate in shape...W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a pistillate flowering branch (natural size); 3, a staminate flowering branch (natural size); 4, a pistillate flower (enlarged 10 times); 5, a staminate flowers in a bract (enlarged 10 times); 6, a back-view of staminate flower (enlarged 20 times); 7, a front-view of staminate flower (enlarged 20 times); 8, a portion of leaf to show the hairs at lower surface.

Quercus myrsinaefolia Blume, Mus. Bot. Lugd.-Bat. I (1850), 305.- Miquel in Ann. Mus. Lugd. Bat. I (1863-64), 117.- Franchet et Savatier, Enum. Pl. Jap. I (1875), 449.- Matsumura, Ind. Pl. Jap. II. pt. 2 (1912), 23.- Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 236.

Quercus bambusaefolia Fortune in Gard. Chron. (1860), 170 (nomen nudum, non Q. bambusifolia Hance).

Quercus bambusaefolia Masters (non Hance). in Gard. Chron. n. ser. I (1874), 632.

Quercus Vibrayeana Franchet et Savatier, Enum. Pl. Jap. I (1875). 449; II (1879), 496.- Forbes in Journ. Bot. XXII (1884), 85.- Skan in Journ. Linn. Soc. XXVI (1899), 522.- Shirasawa, Icon. Ess. For. Jap. I (1900), 55, t. 29, fig. 18-31.- Matsumura, Ind. Pl. Jap. II pt. 2, (1912), 30.

Quercus acuta, var. *bambusaefolia* Nicholson in Kew Handlist Trees & Shrubs. pt. 2 (1896), 181.

Quercus glauca Leveille (non Thunberg) in litt. ex Nakai in Tokyo Bot. Mag. XXIX (1915), 62 (pro synom.)

Quercus Taquetii Leveille, nov. hybr. ex Nakai in Tokyo Bot. Mag. XXIX (1915), 62 (pro synom.)

Cyclobalanopsis myrsinifolia Schottky in Engler, Bot. Jahrb. XLVII (1912), 656.

Cyclobalanopsis Vibrayeana Schottky in Engler, Bot. Jahrb. XLVII (1912), 656.

MOUNT OMEI: Hsi-hsin-so, alt. 1600 m., in thickets, shrub 4-6 metres high, bark dark grey, flowers greenish. *C. L. Sun, No. 1923*, May 8, 1940.

The species is easily recognised by the leaves which are lanceolate in shape, glaucescent on the upper surface and sparsely pubescent on the lower surface. The basal one-third of the margin is entire and the upper two-third is serrate. This species has been reported from Southwestern provinces of China and Japan, but is very rare in Western Szechuan..W. P. Fang.

圖版一百二十六

小 鐵 椆 櫟 變形　別名：青椆櫟。

殼 斗 科

鐵椆櫟

此種具革質而常綠之葉，橢圓狀長圓形或卵狀長圓形，僅葉之上半部有鋸齒，果為卵圓形，僅三分之一為殼斗所包被，殼外斗被同心環形之鱗片，故易辨識。四川境內較少，不產於峨眉山。據調查報告，在長江流域及華南，如浙江，江西，湖北，湖南，四川，西康，雲南，福建及廣東等省，則皆產之。

小鐵椆櫟　變形　別名：岩石櫟

常綠喬木高十公尺，稀達十五公尺；樹皮暗灰色或灰褐色，平滑；小枝細圓，當年生枝紫綠色，無毛，多年生枝暗褐色，具顯明卵形皮孔；冬芽頂生或腋生，卵圓形，鱗片卵形，覆瓦狀排列，外面被灰色細毛。葉互生，革質，卵狀披針形或卵狀長圓形，長五至九公分，寬二公分至二公分半，先端漸尖，基部楔形，邊緣近基部三分之一為全緣，餘具尖銳而密接之鋸齒，葉表面亮綠色，光滑，背面被白粉及稀疏之細毛，中脈在葉表面微下凹。在葉背面則顯著，側脈十二至十四對，在葉表面微顯，在葉背面顯明；葉柄長一公分半至二公分，細而無毛。花單性，大小蕊花異株，小蕊花為長五至十二公分下垂之柔荑花序，每一芽中生出一至三花序，苞片三角狀卵形，早落，外面被稀疏之細毛，花被六至九裂，裂片銳尖，外面被細毛，小蕊六本或較多，與花被裂片等長，花藥黃色，二室，花絲細而無毛，大蕊花單生，或三至五枚成一短穗狀花序，花被具細毛，子房下位，三室，花柱三裂，反捲。果為短柄之圓錐狀卵圓形橡實，一年成熟，下半部包被於杯形之殼斗中，殼斗外被以四環形集心狀且被絨毛之鱗片。

本變形產於峨眉山之蛇倒退，息心所海拔一千三百公尺至一千六百公尺之森林中。峨眉山東北之樂山縣烏尤寺，西南之峨邊縣黑井溪，灌縣之青城山亦產之。五月開花，秋季果可成熟。

此變形分佈於湖北及四川兩省。

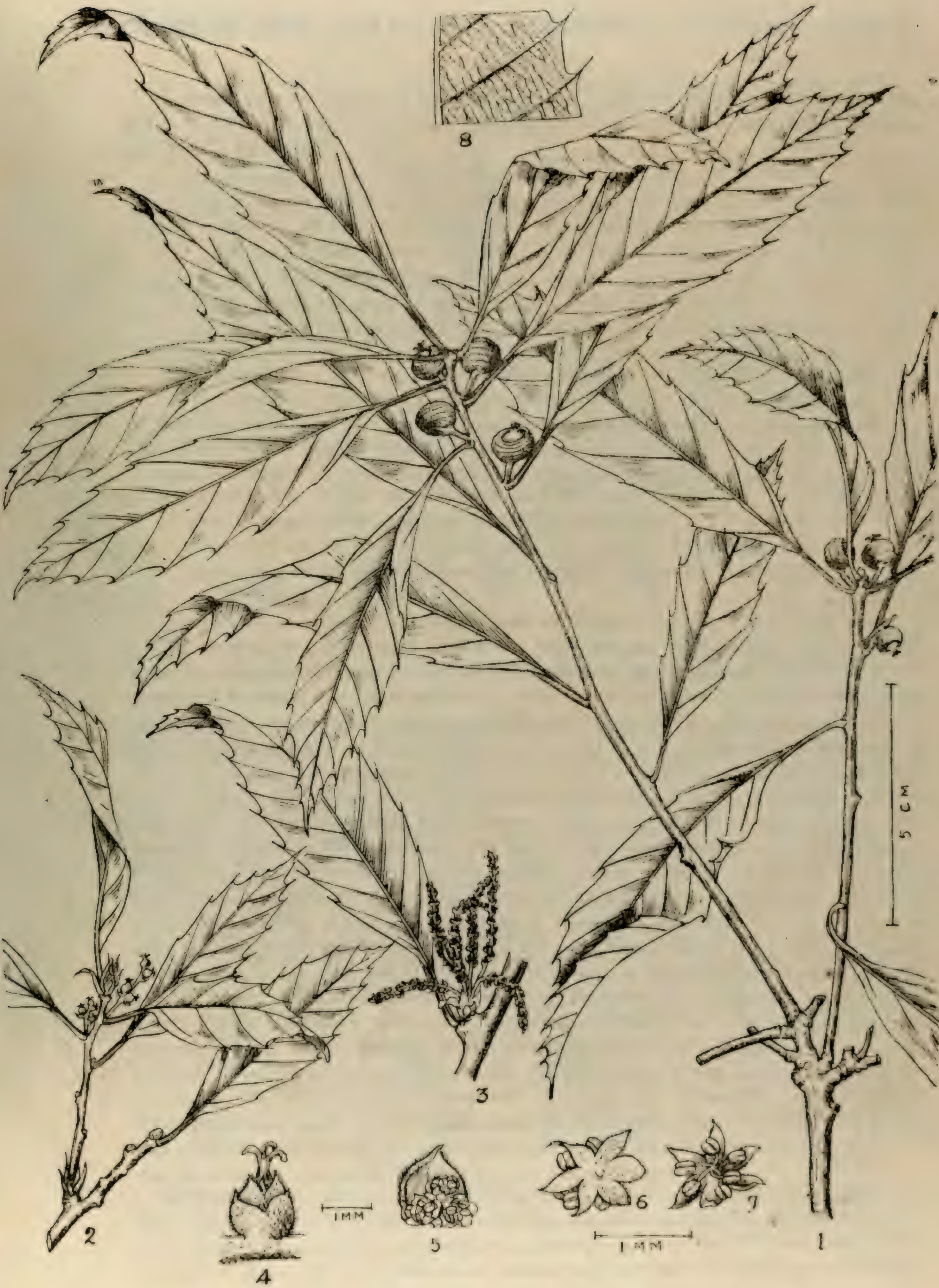
此變形不同於原種者，以其較小而窄之葉，且其形為卵狀長圓形或卵狀披針形。

圖解：1. 果枝（原大）；2. 大蕊花枝（原大）；3. 小蕊花枝（原大）；4. 大蕊花（放大十倍）；5. 一苞片中之三小蕊花（放大十倍）；6. 小蕊花之背面（放大二十倍）；7. 小蕊花之正面（放大二十倍）；8. 葉之一部以示其下面之毛。

細葉青棡　別名：苦櫧，麵櫧

本種產於峨眉山之息心所海拔一千六百公尺之森林中。

其葉為披針形，邊緣除近基部三分之一係全緣外，皆具鋸齒，背面略被白粉及稀疏之細毛，故易與別種辨別，中國西南各省及日本皆產之，已有報告。但在川西則極稀少。



126. Quercus glauca Thunberg form gracilis R. et W.

Plate 127.

QUERCUS OXYODON Miquel var. FARGESII (Franchet) Rehder et Wilson.

Fagaceae.

Quercus oxyodon, Miquel in Ann. Mus. Lugd.-Bat. I (1863-64), 114.- A. De Candolle, Prodr. XVI, pt. 2 (1864), 98.- Rehder et Wilson in Sargent, Pl. Wilson, III (1916), 228.- Rehder, Manual Cult. Trees & Shrubs, (1927), 165.

Cyclobalanopsis oxyodon, Oersted in Kjoebenh. Vidensk. Meddel. XVIII (1866), 71.

Quercus lineata, var. B *oxyodon* Wenzig in Engler, Bot. Garten. Berlin, IV (1886), 232.- Hooker f., Fl. Brit. Ind. V (1888), 605.- King in Ann. Bot. Gard. Calcutta, II (1889), 33, t. 25, fig. 3.- Skan in Journ. Linn. Soc. Bot. XXVI (1899), 517.- Seemen in Engler, Bot. Jahrb. XXIX (1900), 293, pro parte.

Quercus glauca, var. *lineata*, Franchet in Journ. de Bot. XIII (1899), 159.

Quercus lineata, var. *grandifolia*, Skan in Journ. Linn. Soc. Bot. XXVI (1899), 517.

Quercus lineata, var. *macrophylla*, Seemen in Engler, Bot. Jahrb. XXIX (1900), 294.

Cyclobalanopsis lineata, var. *oxyodon*, Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

Cyclobalanopsis lineata, var. *grandiflora*, Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

This Indian species has been reported its occurrence in eastern Szechuan and western Hupeh, but has not been found in Mount Omei and other districts of western Szechuan.

Quercus oxyodon Miquel, var. **Fargesii** (Franchet) Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 229.- Rehder, Manual Cult. Trees & Shrubs (1927), 165.

Quercus Fargesii Franchet in Journ. de Bot. XIII (1899), 168.

Quercus lineata, var. *Fargesii* Skan in Journ. Linn. Soc. Bot. XXVI (1899), 517.

Quercus lineata, var. *oxyodon* Seemen (non Wenzig) in Engler Bot. Jahrb. XXIX (1900), 293, pro parte.

Cyclobalanopsis lineata, var. *Fargesii* Schottky in Engler, Bot. Jahrb. XLVII (1912), 654.

Half-evergreen tree 6 to 8, rarely to 10, metres high, bark grey or dark brown, rough; branchlets terete or subangular, greenish or purplish-green, glabrous, with numerous ovate lenticels and conspicuous leaf-scars; winter-buds terminal or axillary, ellipsoid, scales imbricate, ovate or ovate-oblong, densely yellowish-grey-tomentose outside, glabrous inside. Leaves alternate, coriaceous, oblong or oblong-lanceolate, 12-16, rarely to 24, cm. long, 5-6 cm. broad, acuminate at the apex, broadly cuneate or cuneate rarely subrotund at base, dentate on the margin, teeth appressed with a stiff acumen, upper surface clothed with yellow pubescence while young, changing to deep green, glabrescent or sparsely puberulous when fully developed, lower surface densely yellowish-pilose while young and changing to whitish glaucous with sparse puberulence when matured, midrib impressed above, prominent below, primary veins 16-19, straight, parallel, ending in the teeth of the margin, slightly impressed above, slightly prominent below; petioles 2-4 cm. long, stout, terete except slightly grooved above, dilated at base. Flowers unisexual, monoecious, staminate flowers usually 3 in an ovate bract in a yellow-pubescent slender spike, 6-10 cm. in length, usually 3 to 5 together from one flowering bud, on the upper part of the branchlets, opening at the same time as the young leaves, perianth 5- or 6-lobed, lobes obovate, 1.5 mm. long, pubescent outside, glabrous inside, stamens usually 8 in the upper flower and 4 or 5 in the two lateral flowers of one bract, about 3-4 mm. long, exserted, filaments slender, glabrous, anthers subglobose, 2-celled, rudimentary ovary absent, there is usually pubescence in the centre of the flower, pistillate flower in a stout sparsely pubescent spike, 2.5-3.5 cm. long, in the axil of persistent leaf, from upper part of branchlets, perianth densely yellowish-pubescent, ovary inferior, styles 3, short, stout, spreading, stigma capitate. Fruit a small grey-pubescent acorn, 5-7 mm. in diameter, mostly enclosed by the cupule covered outside with 4 or 5 ring-like or more or less crenulate concentric scales, yellowish-pubescent.

MOUNT OMEI: Hsi-hsin-so, alt 1620 m., in forests, tree 14 metres high, flowers yellow, rare, *W. P. Fang* No. [illegible], May 21, 1940; en route from Hsi-hsin so to Chang-lao-ping, in forests, small tree 6 metres high, bark dark brown, staminate flowers green, *C. L. Sun* No. 2220, May 28, 1940; Chang-lao-ping, alt. 1600 m., in woods, shrub 4 metres high, bark dark brown, flower purplish green,

C. L. Sun, No. *1903*, May 7, 194; Chiu-shih-chiu-tau-kwei, alt. 1400-1600 m., in forests, tree 8 metres high, leaves deep green above, white glaucous below, pistillate flowers densely yellow-pubescent, common, *T. C. Lee*, No. *3116*, July 31, 1940; Chiu-lao-tung, alt. 1800 m., in forests, tree 5-7 metres high, *W. P. Fang*, Nos. *14717*, *14718* & *14719*, May 19, 1940; same locality, in woods, small tree 6 metres high, bark dark brown, flowers green, *C. L. Sun*, Nos. *2151A* & *2192*, May 26, 1940; northeast of Mount Omei, Lo-shan-hsien, Wu-yu-ssu, in woods, tree 8 metres high, only one tree seen, *W. P. Fang*, No. *12479*, July 24, 1938; southwest of Mount Omei, Opien-hsien, Hai-tai-fu-wu-chi (海大戶屋基), alt. 1600-1800 m., tree 10-13 metres high, bark grey, fissured and peeling as thin flakes, common, *W. C. Cheng*, No. *6116*, July 3, 1936; without precise locality, *C. W. Yao*, Nos. *2232*, *3745* & *4859*, in 1938 to 1939; without precise locality, *T. H. Tu*, No. *740*, in 1933; without precise locality, *K. L. Chu*, No. *2472*, in 1936.

Distributions: Szechuan.

This variety differs from the type species as noticed by Professor Rehder. (l.c.) only in the entire and more yellowish-pubescent ring-like scales of the cupules. In the ample collections of specimens before me the scales of the cupules are either entire or crenulate and the colour of the pubescence varies from yellowish to greyish. Therefore the author considers that this variety is really a geographical form of *Quercus oxyodon* Miquel.

Fig. 1, a fruiting branch (natural size); 2, a pistillate flowering branch (natural size); 3, a staminate flowering branch (natural size); 4, a pistillate flower (enlarged 10 times); 5, staminate flowers on a bract (enlarged 10 times).

圖版一百二十七

法氏銳櫟 變種　俗名：䦨青剛。

殼斗科

銳櫟

原產印度之銳櫟，已知在湖北西部及四川東部確亦產之。惟在峨眉山及四川西部各縣則不產斯種。

法氏銳櫟 變種

半常綠喬木高六至八公尺，稀達十公尺；樹皮灰色或暗褐色，粗糙；小枝圓形或微有棱，淡綠色或紫綠色，無毛，具多數卵形皮孔與顯著之葉痕；冬芽頂生或腋生，橢圓形，鱗片覆瓦狀排列，卵形或卵狀長圓形，外面被濃密之黃灰色淺毛，內面無毛。葉互生，革質，長圓形或長圓披針形，長十二至十六公分，稀至二十四公分，寬五至六公分，先端漸尖，基部廣楔形或楔形稀爲亞圓形，邊緣齒狀，鋸齒密接，先端尖銳，幼嫩時表面蓋被黃色絨毛，嘗完全發育時，卽變爲深綠色，光滑或具稀疏之毛，背面幼嫩時被濃密之淡黃色粗毛，成熟時卽蓋被淡白色之蠟粉，並被稀疏之細毛，中脈在葉表面微下凹，在葉背面突出，側脈十六至十九對，直伸，平行，末端止於邊緣之鋸齒先端，在葉表面微下凹，葉背面則稍突出；葉柄長二至四公分，粗壯，除上面微成淺溝外其餘皆爲圓形，基部擴張。花單性，大小蕊花同株，小蕊花常三枚着生於一卵形苞片內，而生於一被黃色細毛，長六至十公分之細穗狀花序上，常一花芽發出三至五穗，生於小枝之上部，開花與幼葉之萌發同時，花被五或六裂，裂片倒卵形，長一公厘半，外面被細毛，內面無毛，一苞片內之較上一花具八小蕊，兩側之花僅具四或五小蕊，長約三至四公厘，伸出花瓣外，花絲細而無毛，花藥亞圓球形，二室，不具不發育之子房，花之中部僅有毛一束；大蕊花着生於一粗壯並疏被細毛而長二公分半至三公分半之穗狀花序上，由小枝上部宿存葉之腋間發出，花被具濃密之黃色細毛，子房下位，花柱三，短而粗壯，廣擴，柱頭頭狀。果爲被灰色毛之小橡實，直徑五至七公厘，大部份包被於殼斗內，殼斗外被以四或五環狀之鱗片，鱗片集心狀並被黃色細毛。

此變種產於峨眉山之息心所，九十九倒拐及九老洞，海拔一千四百公尺至一千八百公尺森林中，峨眉山東北之樂山縣烏尤寺，西南之峨邊縣海大戶屋基等處亦產之。五六月開花，秋後果可成熟。

此變種之分佈區域限於四川。

此變種不同於原種者，誠如芮德教授所言，在其殼斗具環形而全緣之鱗片，且具較多之黃色細毛。在余所搜集之多數標本中，殼斗之鱗片全緣或成齒狀，毛之顏色亦由淡黃至淡灰，故作者認爲此一變種實爲銳櫟因地域不同所成之變形耳。

圖解：1. 果枝（原大）；2. 大蕊花枝（原大）；3. 小蕊花枝（原大）；4. 大蕊花（放大十倍）；5. 在一苞片上之小蕊花（放大十倍）。



127. *Quercus oxyodon* Miquel var. *Fargesii* R. et W.

Plate 128.

ACER MONO Maximowicz.

Aceraceae.

Acer mono Maximowicz in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (18) 126, no. 7; Mel. Biol. II (1857), 416; Mem. Pres. Acad. Imp. Sci St.-Petersb. div. sav. IX (1859), 63,388 (Prim. Fl. Amur.).- Ruprecht in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (1857), p. 265, no. 11; Mel. Biol. II (1857), 5?2.- Regel in Mem. Acad. Imp. Sci. St.-Petersb. ser. 7, IV, No. 4 (1861), p. 3?, no. 107 (Ten. Fl. Ussur.).- Fr. Schmidt in Mem. Acad. Imp. Sci. St.-Petersb. ser. 7, XII, no. 2 (18??), p. 36, no. 80, p. 119, no. 89 (Reis. Amur. Insel. Sachal.).- Palibin in Act. Hort. Petrob. XIV (18??), 105.- Matsumura in Tokyo Bot. Mag. IX (1895), 88.- Bretschneider, Hist. Europ. Bot. Discov. China, (1898), 684.- Komarov in Act. Hort. Petrop. XXII (1904), p. 760, no. 1052 (Fl. Mansh. II).- Fedchenko (or Fedtschenko) in Act. Hort. Petrop. XXXI (1912), p. 150, no. 376 (Mat. Fl. Far. East).- Nakai in Tokyo Bot. Mag. XLV (1931), 124.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 25 (Monog. Chin. Aceraceae).

Acer pictum Thunberg (non Thunberg in 1783), Fl. Jap. (1784), 162.

Acer laetum Regel (non C. A. Meyer) in Bull. Phys. Math. Acad. Sci. St.-Petersb. XV (1857), p. 217, no. 7; Mel. Biol. II (1857), p. 4?4, no. 7.

Acer laetum var. *parviflorum* Regel in Bull. Phys.-Math. Acad. Sci. St.-Petersb. XV (1857), p. 219; Mel. Biol. II (1857), 486.

Acer pictum var.? Baker & Moore in Journ. Linn. Soc. Bot. XVII (1879), 380.

Acer pictum var. *mono* Maximowicz in Mel. Biol. X (1880), 600.

Acer Lobelii Franchet in Nouv. Arch. Mus. Paris, ser. 2, V (1883) 2?? (Pl. David. I, 77).

Acer truncatum Maximowicz (non Bunge) in Act. Hort. Petrop. XI (1889), 109.

Acer pictum var. 2, *typicum*, form 2, *mono* Graf von Schwerin in Gartenfl., XLII (1893), 458.

Acer pictum Thunberg var. *parviflorum* (Regel) Schneider, Illustr. Handb. Laubh. II (1907), 226, fig. 151 g.

Small tree usually about 10 metres high, bark grey or dark brown, branchlets slender, glabrous, those of the current year green or purplish green, those more than one year old grey or blackish grey, with conspicuous rounded or ovate lenticels; winter buds globose, outer scales ovate, glabrous outside, accrescent scales oblong or oblong-oblanceolate, purple, densely yellowish-pilose outside. Leaves opposite, deciduous, chartaceous, subcordate or truncate at base, 6-8 cm. long, 9-11 cm. broad, 5-lobed, occasionally 3-lobed or 7-lobed, lobes ovate, acuminate or subcaudate, entire; sinuses obtuse or broadly obtuse, reaching half way to the middle of blade; upper surface deep green, glabrous, lower surface pale green, sparsely yellowish-pubescent on the nerves while young, then glabrescent; pedicels slender, glabrous, 4-6 cm. long. Flowers numerous, appearing with the leaves, andro-monoecious, in glabrous paniculate corymbs, about 7 cm. long, 4 cm. broad; sepals 5, greenish-yellow, oblong, obtuse, 3 mm. long, sparsely pubescent or pilose outside; petals 5, whitish, obovate, about 3 mm. long; stamens 8, inserted near the inner margin of the disk, filaments slender, glabrous, anthers yellow, ellipsoid; ovary glabrous, compressed, rudimentary in the staminate flower, styles glabrous, stigma revolute; pedicels 1-2 cm. long, slender, glabrous. Fruit a samara, purplish green while young, yellowish when matured; nutlets flat, compressed, 1-1.3 cm. long, 8-11 mm. broad; nutlets, including wings, 2-2.5 cm. long, 1-1.5 cm. broad, spreading horizontally or at obtuse angles.

MOUNT OMEI: Chiu-shih-Chiu-Tao-kuai, alt. 1600 m., *S. S. Chien*, No. *5526*, May 5, 1936; same locality, in thickets, smally tree 5 to 7 metres high, bark grey, flowers green, *C. L. Sun*, No. *184*, May 11, 1939; same locality, small tree 5 metres high, bracts reddish pubescent outside, red inside, *W. C. Cheng*, No. *10312*, May 13, 1940; near Chiu-lao-tung, in woods, shrub 8 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. *1826*, May 1, 1940.

NORTHEASTERN SZECHUAN: without precise locality, *K. L. Chu*, Nos. *1309* & *1423*, in 1934.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, Nos. *2634* & *2636*, in 1936.

Distribution: Hei-lung-kiang, Kirin, Hopei, Shansi, Shensi, Shantung, Kansu, Honan, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Sikang, Yunnan; Corea.

This species has been found in various provinces of China except Fukien, Kwangtung and Kwangsiy It is very rare on Mount Omei and so far has been discovered only at a few localities almost half wae up the mountain...W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminat-flower (enlarged 6 times); 4, a perfect flower (enlarged 6 times).

Acer fulvescens Rehder in Sargent, Pl. Wilson. I (1911), 84; Manual Cult. Trees & Shrubs, (1927), 562.- Schneider, Illustr. Handb. Laubh. II (1912), 1028.- Leveille, Cat. Illustr. Pl, Seutcheuou, (1918), 178, mss.- Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).-Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VIII (1932), 162; XI (1939), 43.- Handel-Mazzetti, Symb. Sin. VII (1933), 640, excl.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., in forests, tree 10 metres high, *C. L. Sun*, No. *464*, June 12, 1939.

Distribution: Szechuan and Yunnan.

Sun's 464 is a mature fruiting specimen with leaves that are only slightly pubescent on the lower surface. At Mount Omei this species is usually a tree about 10 metres high, but in other districts of Western Szechuan and Northern Yunnan it is a low tree, only 5 to 8 metres in height...W. P. Fang.

圖版一百二十八

單幹槭

槭樹科

小喬木高約十公尺；樹皮灰色或暗褐色，小枝纖細，無毛，當年生枝綠色或紫綠色，多年生枝灰色或深灰色，具顯明之圓形或卵形皮孔；冬芽圓球形，外面之鱗片爲卵形，表面無毛，開花後始長大之鱗片長圓形或長圓倒披針形，紫色，表面被濃密之黃色絨毛。葉對生，冬季凋落，紙質，基部亞心臟形或截形，長六至八公分，寬九至十一公分，五裂，偶現三裂或七裂，裂片卵形，漸尖或微成尾狀，全緣；兩裂片中間之凹穴成鈍形或廣鈍形，達於葉片中部；表面深綠色，無毛，背面淡綠色，幼嫩時脈上被稀疏之黃色絨毛，旋即光滑無毛；葉柄細而無毛，長四至六公分。花多數，與葉之發出同時開放，僅小蕊花與兩性花同株，成爲無毛圓錐狀之繖房花序，長約七公分，寬四公分；萼片五枚，黃綠色，長圓形或鈍形，長三公厘；小蕊八本，其位近於花盤之內緣，花絲纖細，無毛，花藥黃色，橢圓形；子房無毛，左右扁平，在小蕊花中不發育，花柱無毛，柱頭外旋；花梗長一至三公分，外面無毛。果爲翅果，幼嫩時爲紫綠色，成熟時爲淡黃色；小堅果左右扁平，長一公分至一公分三公厘，寬八至十一公厘；小堅果連翅長三至三公分半，寬一至一公分半，伸張成一平面或爲鈍角。

此種產於峨眉山之九十九倒拐及九老洞附近，海拔一千六百公尺左右之森林中。四川東北部，及西康之寶興縣亦產之。五月開花，八月果可成熟。

此種分佈於黑龍江，吉林，河北，山西，陝西，山東，甘肅，河南，浙江，江蘇，安徽，江西，湖北，湖南，四川，西康，雲南等省及朝鮮。

此種除福建廣東廣西外，我國各省皆產之。在峨眉山則稀罕，僅知其產於山之中部。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 小蕊花（放大六倍）；4. 兩性花（放大六倍）。

黃毛槭

此種產於峨眉山之九老洞。海拔一千八百公尺之森林中。

此種分佈於四川及雲南兩省。

此種在峨眉山常爲喬木，高約十公尺。但在川西及滇北等地，則爲僅高五至八公尺之小樹。



128. *Acer mono Maximowicz*



Plate 129.

ACER CATALPIFOLIUM Rehder.

Aceraceae.

Acer catalpifolium Rehder in Sargent, Pl. Wilson. I (1911), 87; Manual Cult. Trees & Shrubs, (1927), 563.- Schneider, Illustr. Handb. Laubh. II (1912), 1029.- Leveille, Cat. Illustr. Pl. Seutchuen. (1918), 178, mss.- Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China).- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 149· VIII (1932), 165; XI (1939), 50 (Monogr. Chin. Acerac.).

Tree usually 20, rarely to 30, metres high, bark grey or dark grey, smooth; branchlets slender, terete, glabrous, widely spreading and becoming a flat crown, those of the current year green or purplish green, those more than one year old green or dark green, with sparse ovate lenticels; winter-buds ovoid, terminal or axillary, with 6 imbricate acute scales, glabrescent on both sides, ciliate on the margin. Leaves deciduous, chartaceous, ovate or ovate-oblong, entire or occasionally with 2 undeveloped lateral lobes below the middle, 9-20 cm. long, 5-13 cm. broad, acute or obtuse, rarely acuminate, with a caudate acumen on the apex, rounded or subcordate at the base, upper surface shining green, glabrous, lower surface pale green, glabrous except with tufts of hairs at the axils of nerves, midrib conspicuous above, elevated below, primary nerves 4-6, slightly impressed above, slightly elevated below; petioles slender, glabrous, 3-9, rarely to 14 cm. long, purplish while young then changing to green. Flowers numerous, andromonoecious, green or yellowish green, in glabrous terminal corymbs about 6 cm. long, usually terminal on a leafy branchlet, appearing with the developing of leaves, sepals 5, greenish, glabrous, ovate-oblong, 3-4 mm. long, 1-1.5 mm. broad, petals oblong-lanceolate, occasionally emarginate at apex, 4-6 mm. long, 1-1.5 mm. broad, greenish yellow' glabrous (in perfect flowers the petals rarely undeveloped), stamens 8, in staminate flowers slightly longer than or as long as the petals, in perfect flowers shorter than sepals, anthers yellow, subglobose, glabrous, filaments slender, glabrous, disk extrastaminal, slightly lobed, glabrous, ovary superior, glabrous, undeveloped in staminate flower, style slender, divergent at the middle and recurved, stigma small. Fruit a samara with a compressed nut, 1-1.5 cm. long, 4-6 mm. broad, with wings 3.5-4 cm. long, 1-1.2 cm. broad at the widest part, spreading at right to obtuse angles, seeds dark brown, suborbicular, 6 mm. in diameter; pedicels slender, glabrous, 2-4 cm. long.

MOUNT OMEI: near Hwang-wan, alt. 500 m., at roadside, tree 20 metres high, *W. P. Fang*, No. *14174*, April 21, 1940; Fu-hu-ssu, alt. 600 m., tree 15 metres high, *W. P. Fang*, No. *12508*, July 26, 1938; same locality, *W. P. Fang*, No. *15629*, December 2, 1940; ? Chiu-lao-tung, alt. 1800 m., in forests, tree 10 m., high, *C. L. Sun*, No. *464* June 12, 1939 (doubtful refer here and may be a new variety); without precise locality, *C. W. Yao*, Nos. *3551* & *5074*, in 1939.

WESTERN SZECHUAN: Mount Tsing-cheng, alt. 800 m., *S. S. Chien*, Nos. *5395*, *5736* & *5881*, April to May 1937; same locality, in forests, small tree 7-10 metres high, young leaves purplish green, flowers small, green, *W. P. Fang*, Nos. *12078*, *12104*, *12189* & *12217*, April 1938; same locality, by a stream, tree 8 metres high, flowers green or yellowish green, occasionally, *W. P. Fang*, No. *19367*, April 5, 1944.

Distribution: Szechuan and Sikang.

This species is a very beautiful tree and could be cultivated as an avenue-tree along the highways or along the streets in Szechuan province. It is easily recognized by its large samara and its unlobed ovate leaves. It was discovered by Wilson at Ya-an-hsien and Kuan-hsien and has been found not uncommonly at the base of Mount Omei. It is found only in Western Szechuan in an area which is limited only by Kuan-hsien to the north, Ya-an-hsien (now in Eastern Sikang) to the west, and Omei-hsien to the south.. ....W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a back view of staminate flower (enlarged 6 times); 4, a front view of staminate flower to show the stamens and disk (enlarged 6 times); 5, a perfect flower (enlarged 6 times).

圖版一百二十九

梓葉槭

槭樹科

喬木高二十公尺，稀達三十公尺；樹皮灰色或暗灰色，光滑；小枝細圓，無毛，常伸展爲扁平之樹冠；當年生枝綠色或紫綠色，多年生枝綠色或暗綠色，具稀疏之卵形皮孔；冬芽卵圓形，頂生或腋生，具六枚覆瓦狀排列之銳尖鱗片，兩面光滑無毛，邊緣具纖毛狀之鋸齒，葉多季凋落，紙質，卵形或卵狀長圓形，全緣或偶具二未發育而側生之裂片，長九至二十公分，寬五至十三公分，先端銳尖或鈍形，稀漸尖，先端成尾狀，基部圓形或亞心臟形，表面亮綠色無毛，背面淡綠色，除葉脈腋間具叢生或束狀之細毛外，餘皆無毛，中脈在表面顯明，在背面隆起；側脈四至六對，在葉表面微凹，在葉背面稍隆起；葉柄細而無毛，長三至九公分，稀達十四公分，幼嫩時紫色，旋即變爲綠色。花甚多，小蕊花與兩性花同株，綠色或黃綠色，着生於頂生之繖房花序上，花序無毛，長約六公分，常頂生於着葉之枝上，花與葉同時開發，萼片五枚，淡綠色，無毛，卵狀長圓形，長三至四公厘，寬一公厘至一公厘半，花瓣長圓披針形，先端偶成小缺，長四至五公厘，寬一至一公厘半，黃綠色，無毛，（在兩性花中花瓣偶有不發育者），小蕊八本，在小蕊花中微長於花瓣，或與之等長，在兩性花中則短於萼片，花藥黃色，亞圓球形，無毛，花絲細而無毛，花盤生於小蕊之外圍，微裂，無毛，子房上位，無毛，在小蕊花中不發育，花柱細，中部以上分爲二枝且反捲，柱頭細小。果爲黃綠色之翅果，具扁平之堅果，長一至一公分半，寬四至六公厘，具長三公分半至四公分之翅，最寬部寬一至一公分二公厘，伸張爲鈍角，種子暗褐色，亞圓形，直徑六公厘，果梗細而無毛，長二至四公分。

此種產於峨眉山之黃灣及伏虎寺，海拔五百公尺之森林中或路旁。川西之灌縣青城山亦產之。四月開花，九月果可成熟。

此種係極美觀之樹，在四川省境內，可作城市及公路兩旁之行道樹。以其具大翅果及不分裂之卵形葉，故易辨別。原係威爾遜氏在雅安灌縣兩處發現。在峨眉山麓亦甚普通。此種之分佈區域限於川西之成都平原，僅北止於灌縣，西止於雅安縣（現屬西康省），南達於眉峨縣。

圖解： 1. 花枝（原大）； 2. 果枝（原大）； 3. 小蕊花之背面（放大六倍）； 4. 小蕊花之前面，示其小蕊與花盤（放大六倍）； 5. 兩性花（放大六倍）；



129. *Acer catalpifolium* Rehder

Plate 130.

ACER OLIVERIANUM Pax.

Aceraceae.

Acer Oliverianum Pax in Hooker Icon. Pl, XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 448 (Fl. Central-china); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 21.— Bretschneider, Hist. Europe. Bot. Discov. China, (1898), 781.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 100 (Chin. Maples).— Hemsley in Journ. Linn. Soc. XXXVI (1905), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 153, t. 77; II (1907), 26; in Sargent, Pl. Wilson. I (1911), 90; in Journ. Arn. Arb. VII (1926), 219; VIII (1927), 162; Manual Cult. Trees & Shrubs, (1927), 569.— Schneider, Illustr. Handb. Laubh. II (1907), fig 135. r-u.— Leveille Cat. Illustr. Pl. Seutcheouen (1918), 179, mss.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— in Notes Roy. Bot. Gard. Edinb., XIV (1924), 196.—Chien in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. III (1927), 61 (Fl. Hwangshan).— Bean, Trees & Shrbs, Hardy Brit. Isl. I (1923), 151.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 161; VIII (1932), 165; XI (1939), 78.— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

Small tree, 5 to 7 metres high, bark smooth, dark brown, occasionally covered with waxy coating; branchlets slender, glabrous or slightly puberulous, those of the current year greenish purple, those more than one year old greenish brown; winter buds small, ellipsoid, glabrescent. Leaves opposite, deciduous, chartaceous, 4-8 cm. long, 5-9 cm. broad, subcordate or nearly truncate at base, 5-lobed; lobes triangular-ovate, acuminate, appressed, sharply serrulate, sinuses obtuse or acute, reaching one-third or one half way to the middle of the blade, upper surface deep green, glabrous, lower surface pale green, glabrous except the axillary tufts of densely yellowish hairs; petioles 2.5-5 cm. long, slender, glabrous or slightly pubescent near the apex. Flowers andro-monoecious, in glabrous terminal corymbs, appearing while the developing of leaves; sepals 5, purplish-green, ovate or elliptical-ovate, 3-4 mm. long; petals 5, whitish, ovate, obtuse, 3-4 mm. long; stamens 8, in staminate flowers slightly longer than petals, filaments glabrous, anthers yellow, in pistillate flower the stamens much shorter; disk slightly lobed, extrastaminal; ovary slightly villous, style glabrous, 2 mm. long, stigmas revolute. Fruits, samaras, in pendulous corymbose fruiting inflorescences; nutlets strongly convex, about 6 mm. long, 4 mm. broad, distinctly veined; wings purplish while young and brownish-yellow when matured, with nutlets 3-3.5 cm. long, 1 cm. broad, spreading nearly horizontally.

MOUNT OMEI: Hsi-hsin-so, alt. 1400 m., in thickets, small tree 10 metres high, fruits purplish-green, *C. L. Sun*, No. *316*, May 24, 1939; Chang-lao-ping, in forests, small tree 8 metres high, occasionally, *T. C. Lee*, No. *2934*, July 22, 1940; same locality, small tree 6 metres high, samaras yellowish brown, common, *T. C. Lee*, No. *3611*, October 1, 1049; Chiu-lao-tung, alt. 1800 m., in forests, small tree 6 metres high, bark greenish grey, flowers purplish-red, *C. L. Sun*, No. *1830*, May 1, 1940; Hwa-yen-ting, alt. 1950 m., in forests, small tree 6 metres high, young samaras green, *W. P. Fang*. No. *14790*, May, 20, 1940; same locality, *W. P. Fang*, No. *7785*, July 20, 1930; south-west of Mount Omei, Opien-hsien, *W. C. Cheng*, No. *6327*, July 1936.

Distribution: Kansu, Chekiang, Anhwei, Hupeh, Szechuan, Kweichow, Yunnan, Kwangsi.

This species superficially resembles *Acar sinense* Pax, but can be distinguished easily by the chartaceous leaves with 5, shallow, obtusely, serrulate lobes, and by the corymbose inflorescences.

. . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a perfect flower (enlarged 10 times); 5, a portion of leaf showing hairs on the veins of lower surface (enlarged 5 times).

圖版一百三十

阿氏槭 別名：五裂槭

槭樹科

小喬木，高五至七公尺，樹皮光滑，暗褐色，偶被蠟質層；小枝纖細，無毛或微被毛，當年生枝紫綠色，多年生枝綠褐色：冬芽小，橢圓形，光滑無毛。葉對生，冬季凋落，紙質，長四至八公分，寬五至九公分，基部亞心臟形或近於楔形，五裂；裂片為三角狀卵形，漸尖，具密接而銳利之鋸齒，裂片之穴成鈍形或銳尖，其深及葉片三分之一或一半，表面深黃綠色，無毛，背面淡綠色，除葉脈間有叢生之黃色毛外，餘皆無毛；葉柄長二公分半至五公分，細而無毛或近其頂端微被毛。小蕊花與完全花同株，成無毛而頂生之繖房花序，與葉同時開放；萼片五枚，紫綠色，卵形或橢圓狀卵形，長三至四公厘；花瓣五枚，淡白色，卵形，先端鈍形，長三至四公厘；小蕊八本，在小蕊花中較長於花瓣，花絲無毛，花藥黃色，在大蕊花中小蕊極短；花盤微裂，生於小蕊之外圍；子房微被絨毛，花柱無毛，長二公厘，柱頭反捲。果為翅果，着生於下垂繖房狀之果序上；小堅果凸出成卵圓形，長約六公厘，寬四公厘，具顯著之脈紋；翅幼嫩時為紫色，成熟時為褐黃色，連小堅果共長三至三公分半，寬一公分，展開成一平面。

本種產於峨眉山之息心所，長老坪，九老洞及華嚴頂，海拔一千四百至二千公尺之叢林中。峨眉山西南之峨邊縣亦產之。四月開花，八月果可成熟。

本種分佈於甘肅，浙江，安徽，湖北，四川，貴州，雲南及廣西等省。

本種在表面上與中華槭相似，實則易於區別，因本種之葉紙質，具五淺裂鈍鋸齒狀之裂片，并有繖房狀之花序，與中華槭完全不同也。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.完全花（放大五倍）；5.葉之一部放大以示其背面之毛（放大五倍）。



130. *Acer oliverianum* Pax

Plate 131.

ACER SINENSE Pax,

VAR. BREVILOBUM Fang et VAR. LONGILOBUM Fang.

Aceraceae.

Acer sinense Pax in Hooker, Icon. Pl. XIX (1898), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271; ex Diels in Engler, Bot. Jahrb. XXIX. (1900), 448 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22.— Graf von Schwerin in Gartenfl. XLII (1893), 26[illegible].— Bretschneider, Hist. Europ. Bot. Discov. China, (1898), 7[illegible]1.— Henry in Gard. Chron. Ser. 3, XXXIII (1903), 100 (Chin. Maples).— Hemsely in Journ. Linn. Soc. Bot. XXXVI (1906), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 1[illegible], t. 7[illegible]; II (1907) 2[illegible]; in Sargent, Pl. Wilson. I (1911), 90, excl.; in Journ. Arn. Arb. VIII (1927), 162; Manual Cult. Trees & Shrubs (1927), 569.— Schneider, Illustr. Handb. Laubh. II (1907), 250, figs. 133 e-l.— Matsumura in Icon. Pl. Koisik. I (1911), 17, t. 9.—Leveille, Cat. Illustr. Seutcheouen, (1918), 179, nss.— Chung in Mem. Sci. Soc. China, I (1924), 180 (Cat. Trees & Shrubs China).— Hu in Science, Sci. Soc. China, IX (1924), 840.—Chien in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. III (1927), 61 (Fl. Hwangshan).— Bean, Trees & Shrubs, Hardy Brit. Isl. I (1929), 159.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 151, in part, excl. specimen cited Fang's 5539 from Szechuan; XI (1939), 82 (Monogr. Chin. Aceraceae).— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

> *Liquidamber Rosthornii* Diels in Engler, Bot. Jahrb, XXIX (1900), 380 (Fl. Centralchina).
>
> *Acer sinense* Pax var. *typicum* Pax in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22.
>
> *Acer sinense* Pax. var. *B. concolor* Pax in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22.— Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 343, 360, fig. 92.— Rehder, Manual, Cult. Trees & Shrubs, (1927), 569.— Bean, Trees & Shrubs, Hardy Brit. Isl. I (1927), 159.— Handel-Mazzetti, Symb. Sin. VII (1933), 640.

Small tree, usually 5 to 8 metres high, bark yellowish-brown or dark brown, smooth; branchlets slender, glabrous, those of the current year greenish-purple, glabrous, those more than one year old brownish green or dark brown, smooth; winter-buds small, covered, before the leaves fall, by the enlarged bases of the petioles, scales 6, villous at the inner side near the margin. Leaves opposite, deciduous, subcoriaceous, cordate or subcordate, rarely truncate, 10-14 cm. long, 12-15 cm. broad, 5-lobed; lobes oblong-ovate or triangular-ovate, acuminate, appressed serrulate except near the base which is entire, sinuses acute, reaching more or less to the middle of the blade, upper surface deep green, glabrous, lower surface pale green, glabrescent except tufts of yellowish hairs on the axils of nerves; petioles stout, glabrous, 3-5 cm. long. Flowers andro-monoecious, in pendulous, many-flowered terminal panicles, usually 5-7 cm, long, on peduncles 3-5 cm. long; sepals 5, greenish, ovate-oblong or triangular-oblong, acutish, about 3 mm. long, slightly ciliate on the margin; petals 5, whitish, oblong or ovate-oblong, as long as the sepals; stamens 8, rarely 5-7, longer than sepals, very short in pistillate flowers, anthers yellow, filaments glabrous; disk thick, extrastaminal, slightly pubescent; ovary white-pilose, rudimentary in staminate flower, style glabrous, 3-4 mm. long, stigmas spreading or recurved; pedicels slender, glabrous, about 5 mm. long. Fruits; yellowish samaras, usually glabrous, in pendulous paniculate fruiting inflorescence; nutlets ellipsoid, strongly convex, 5-7 long. 3-4 mm. broad; wings 1 cm. broad, 2.5-3.5 cm. long, spreading at acute angles or horizontally.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., small tree 8 metres high, flowers greenish, *W. P. Fang*, No. *14673*, May 19, 1940; without precise locality, *C. W. Yao*, Nos. *4424* & *4750*, in 1939.

Distribution: Chekiang, Anhwei, Hupeh, Szechuan, Hunan, Kweichow, Kwangtung, Kwangsi.

The type-specimen, which was collected by Augustine Henry from Chien-shih-hsien of Western Hupeh, has coriaceous leaves, but the plants of Mount Omei have usually chartaceous leaves with lobes that are also smaller than those of the type-specimen.

Acer sinense Pax, var. **brevilobum** Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1933), 85.

> *Acer Campbellii* Fang (non Hooker f. et Thomson) in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932). 153.

WEST OF MOUNT OMEI: Opien-hsien, Yen-ching-chi, in forests, tree of 13 metres high, bark grey, smooth, *W. G. Cheng*, No. *6031*, July 1936; without precise locality, *C. W. Yao*, Nos, *3623*, *4315* & *4496*, in 1939.

Distriontion: Szechuan.

This variety was discovered by the writer from Mapien-hsien and Opienhsien. It is fairly

common in this region. The broad leaves, subrotund at the base and with remotely serrulate lobes, as well as the oblong-ellipsoid nutlets, with falcate wings always widest near the apex, distinguish this variety from other varieties and species. It is a great pity that we have not yet gathered a good flowering specimen which may show that this variety should be given specific rank . . . W. P. Fang.

Fig. 4, a fruiting branch (natural size).

Acer sinense Pax, var. **longilobum** Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 86.

MOUNT OMEI: without precise locality, *W. P. Fang*, No 6639, July 1930.

EASTERN SZECHUAN: Nanchuan-hsien, Mount of the Golden Buddha, *T. H. Tu*, No. 3041 May 16, 1932.

Distribution: Hupeh and Szechuan.

This variety formerly was known from Hsing-shan-hsien of Western Hupeh and Mount Omei of Western Szechuan. Tu's discovery of it at Nanchuan-hsien of Southeastern Szechuan confers the fact that this is a distinct variety and also show that it has a wider distribution than was thought . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting inflorescence (natural size); 3, a perfect flower (enlarged 5 times).

圖版一百三十一

中華槭 別名：華瀛，羊角槭。

淺裂中華槭及深裂中華槭 二變種

槭樹科

小喬木高五至八公尺；樹皮黃褐色或暗褐色，平滑；小枝細而無毛，當年生枝紫綠色，無毛，多年生枝褐綠色或暗褐色，光滑；冬芽小，在葉落之先常被葉柄之膨大基部所蓋被，鱗片六枚，內面近邊緣處被絨毛。葉對生，冬季凋落，亞革質，心臟形或亞心臟形，稀為楔形，長十至十四公分，寬十二至十五公分，五裂；裂片長圓卵形或三角狀卵形，漸尖，除基部全緣外，餘具密接之細鋸齒，裂片間之凹穴銳尖，其深幾達於葉片之中部，表面深綠色，無毛，背面淺綠色，除脈腋上被叢生之淡黃色毛外，餘皆光滑；葉柄粗壯，無毛，長三至五公分。小蕊花與完全花同株，着生於下垂頂生之圓錐花序上，長五至七公分，花梗長三至五公分；萼片五枚，淡綠色，卵狀長圓形或三角狀長圓形，先端銳尖，長約三公厘，邊緣微具纖毛；花瓣五枚，淡白色，長圓形或卵狀長圓形，與花萼等長；小蕊八本，稀為五至七本，長於萼片，在大蕊花中則極短，花藥黃色，花絲無毛；花盤甚厚，生於小蕊之外圍，微被毛；子房被白色淺毛，在小蕊花中不發育，花柱無毛，長三至四公厘，柱頭開展或反捲；花梗細而無毛，長約五公厘。果為淡黃色之翅果，常無毛，着生於下垂之圓錐狀果序上；小堅果橢圓形，凸出成長卵圓形，長五至七公厘，寬三至四公厘；翅寬一公分，長二公分半，張開成銳角或成平面。

本種產於峨眉山之九老洞，海拔一千八百公尺之林中。五月開花，九月果可成熟。

本種分佈於浙江，安徽，湖北，四川，湖南，貴州，廣東，及廣西等省。

本種係亨利氏發現於湖北之建始縣。其模式標本具革質之葉。在峨眉山採得之標本則具紙質葉。其裂片亦較原種標本為小。異地變形，在所不免也。因其翅果狀似羊角，故俗名羊角槭。至名丫角槭者，則係由羊角槭輾轉譯音之誤也。

淺裂中華槭 變種。

此變種之葉淺裂，具短而寬之裂片。

此變種產於峨眉山西南峨邊縣之鹽井溪。

此變種之分佈限於四川。

此變種係作者發現於馬邊縣及峨邊縣，在彼處極常見。葉闊，基部亞圓，具稀疏細鋸齒之短裂片，與長圓狀橢圓形之小堅果，具鐮形之翅，近先端處常最寬，使此變種與原種易於區別。其花必能確定此種在分類上之地位，惜乎吾人未能採得其花之標本為歉耳。

圖解：4.果枝（原大）。

深裂中華槭 變種。

本變種之葉深裂，具長裂片。

本變種產於峨眉山及川東之南川縣金佛山。

本變種分佈於湖北及四川。

前此僅知本變種產於峨眉山及鄂西之興山縣。自杜大華君在南川金佛山發現後，更可證明其為顯著之變種，且有較寬之分佈區域。

圖解：1.花枝（原大）；2.果序（原大）；3.完全花（放五倍）。



131. *Acer sinense* Pax var. *longilobum* Fang
brevilobum Fang

Plate 132.

ACER FLABELLATUM Rehder.

Aceraceae.

Acer flabellatum Rehder ex Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 340, name only; Rehder in Sargent, Trees & Shrubs, I (April 1905), 161, t. 81, in Egnlish; in Fedde Repert. Nov. Spec. I (July 1905), 7, in Latin; in Sargent, Pl. Wilson. I (1911), 91; Manual Cult. Trees & Shrubs, (1927), 569.— Dunn in Journ. Linn. Soc. XXXIX (1911), 413.— Leveille, Cat. Pl. Seutcheouen, (1918), 178, mss.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 155; VIII (1932), 167; XI (1939), 89.

Acer Sieboldianum var. ? Baker & Moore in Journ. Linn. Soc. XVII (1880), 380, in part.

Acer japonicum, Forbes & Hemsley (non Thunberg) in Journ. Linn Soc. XXIII (1886), 140, in part.

Acer robustum Rehder (non Pax) in Sargent, Trees & Shrubs,, II (1907), 26.— Schneider, Illustr. Handb. Laubh. II (1907), 206.— Matsumura in Icon. Koisikavenses, I (1911), t. 12, in part. incl. syn. *Acer flabellatum*.

Small tree, usually 6 to 10 metres high, bark smooth, brown or brownish-grey; branchlets slender, glabrous, those of the current year green or purplish-green; those more than one year old olive-brown or reddish-brown; winter-buds ellipsoid, villous on the outer surface. Leaves deciduous, chartaceous or membranaceous, deeply cordate at base, roundish in outline, 8-12 cm. diameter, usually 7-lobed, occasionally 9-lobed, lobes usually ovate-oblong, rarely ovate or triangular-ovate, acuminate, sharply and irregular serrate with appressed acute teeth; sinuses acuminate or rarely acute, reaching to the middle of the blade, upper suface deep green, glabrous, lower surface pale green, glabrescent, except villous on the nerves and tufts of hairs at the axils of nerves, primary and secondary nerves prominent on both surfaces; petioles slender, up to 7 cm. long, villous while young, then glabrous. Flowers andro-monoecious, in glabrous panicles about 3 to 5 cm. long, on glabrous peduncles about 3 cm. long; sepals 5, greenish, ciliate on the margin, ovate-lanceolate, acute, about 3 mm. long; petals 5, yellowish-white, obovate, as long as the sepals; stamens 8, glabrous, about 5 mm. long, disk glabrous, slightly lobed, extrastaminal; ovary sparsely pubescent or glabrous; pedicels about 1 mm. long, slender, glabrous. Fruits yellowish-brown samaras, in pendulous paniculate fruiting inflorescence; nutlets convex, subglabrous, 6 mm. long, 5 mm. broad; wings included nutlets usually 3-3.5 cm. long, rarely up to 4 cm. long, 1-1.2 cm. broad, spreading nearly horizontally.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., *S. S. Chien*, No. *6145*, July 15, 1937; same locality, in thickets, small tree 10 metres high, *C. L. Sun*, Nos. *196* & *207*, May 12, 1939; Hua-yen-ting, alt. 1950 m., small tree 5 metres high, samaras greenish, occasionally, *W. P. Fang*, No. *12872*, August 3, 1939; Ta-cheng-ssu, alt. 2300 m., small tree 8 metres high, *W. P. Fang*, No. *17151*, July 5, 1941; south-west of Mount Omei, Opien-hsien. Yen-king-ki, *W. C. Cheng*, Nos. *6169 6231* & *6517*, July 1938; same locality, *C. W. Yao*, Nos. *4004* & *4277*, in 1939.

NORTHEASTERN SZECHUAN: without precise locality, *K. L. Chu*, No *1279* & *1319*, in 1935.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, Nos. *2466*, *2521*, *3152* & *3285*, July 1936.

Distribution: Hupeh Szechuan and Sikang.

This species is easily recognised by its 7-lobed leaves which are deeply cordate at the base and pubescent on the primary veins, by the ovate-oblong lobes which are irregularly serrate on the margin, and by its large samaras with wings spreading horizontally. . . . . W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 10 times); 4, a staminate flower (enlarged 10 times).

圖版一百三十二

扇葉槭

槭樹科

小喬木高五至十公尺，樹皮光滑，褐色或灰褐色；小枝細而無毛，當年生枝綠色或紫綠色，多年生枝紫褐色或紅褐色；冬芽體圓形，外面被絲狀細毛。葉冬季凋落，紙質或膜質，基部深心臟形，外形渾圓頗似團扇，直徑八至十二公分，常七裂，偶或九裂，裂片常成卵狀長圓形，稀卵形或三角狀卵形，漸尖，邊緣均具不規則之鋒銳鋸齒，齒尖銳利而密接；裂片之間穴漸尖或稀銳尖，其深及於葉片之中部，葉表面深綠色，無毛，背面淡綠色，光滑，僅葉脈上有絲狀細毛及葉腋有叢生之毛，側脈在葉之兩面皆顯明；葉柄纖細，長達七公分，幼嫩時被絲狀之毛，後則無毛。小蕊花與完全花同株，着生於長約三至五公分且無毛之圓錐花序上，着生於長約三公分之無毛花梗上；萼片五枚，淡綠色，邊緣被纖毛，卵狀披針形，銳尖，長約三公厘；花瓣五枚，黃白色，倒卵形，與萼片等長，小蕊八本，無毛，長約五公厘，花盤無毛，微裂，生於小蕊外圍；子房被稀疏之毛或無毛；小花梗長約一公厘，細而無毛。果爲黃褐色之翅果，着生於下垂之圓錐狀果序上；小堅果凸出，微光滑，長六公厘，寬公五厘；翅連同小堅果常長三至三公分半，稀達四公分，寬一公分至一公分二公厘，展開成平面。

本種產於峨眉山之九老洞，華嚴頂，大乘寺，海拔一千八百公尺至二千三百公尺之叢林中。峨眉山西南之峨邊糉鹽井溪亦產之。五六月開花，八九月果可成熟。

本種分佈於湖北，四川及西康等省。

本種具團扇形七裂之葉，基部爲深心臟形，側脈上被毛，並具卵狀長圓形之裂片，其邊緣有不規則之鋸齒，及其大翅果之翅張開成一平面，故易與其他種類辨別。

圖解：1.花枝（原大）；2.果枝（原大）；3.兩性花（放大十倍）；4.小花蕊（放大十倍）。



132. *Acer flabellatum* Rehder



Plate 133.

ACER ERIANTHUM Graf von Schwerin.

Aceraceae.

Acer erianthum Graf von Schwerin. Mitteil. Deutsch. Dendr. Ges. X (1901), erste Auflage, p. 59, zweite auflage, p. 320, in German; ex Pax in Engler, Pflanzenreich, Heft 8 (IV 163) (1902), 22, 79, in Latin; in Engler, Bot. Jahrb. XXXVI, Beibl. LXXXII (1905), 73.- Veitch in Journ. Roy. Hort. Soc. XXIX, part 3 (1904), 360.- Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.- Rehder in Sargent, Trees & Shrubs, I (1905), 159, t. 80; II (1907), 26; in Sargent, Pl. Wilson I (1911), 90; in Journ. Arn. Arb. VII (1926), 219; Manual Cult. Trees & Shrubs, (1927). 560.- Schneider, Illustr. Handb. Laubh. II (1907), 204, figs. 132 m-p.- Thatcher in Gard. Chron. LXXII (1922), 119.- Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China).- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 156; VIII (1932), 166; XI (1939), 94 (Monogr. Chin. Aceraceae).

Acer oxyodon Franchet, mss. in Herb. Paris.

Acer stachyanthum Franchet, mss. in Herb. Paris.

Small tree, usually 5 to 10 metres high, rarely up to 15 metres high, bark grey or brownish-grey branchlets slender, glabrous, those of the current year green or purplish-green, those more than one year old grey or brownish-grey and with numerous conspicuous ovate lenticels; winter-buds small, ellipsoid, scales 6, ciliate on the margin. Leaves opposite, deciduous, chartaceous, rounded or truncate and occasionally subcordate at the base, 9-11 cm. long, 8-12 cm. broad, usually 5-lobed, rarely 7-lobed, lobes ovate or triangular-ovate, acuminate, sharply and appressed serrulate on the margin except entire near the base of lobes, sinuses acuminate, reaching one-third to nearly half way to the middle of the blade, upper surface deep green, glabrous, lower surface light green and distinctly reticulate, puberulous and with tufts of whitish hairs on the axils of the primary and secondary nerves; petioles 4-9 cm. long, slender, cylindrical, glabrescent. Flowers numerous, androgynous, in pubescent compound paniculate racemes, 9-12 cm. long, 1-1.8 cm. in diameter, on peduncles 2-3.5 cm. long; sepals 4, yellowish-green, ovate or broadly ovate, obtuse, glabrous outside, villous inside and especially on the margin, about 1.5-2 mm long; petals 4, yellowish-white, obovate, slightly shorter than the sepals; stamens 8, about 3-4 mm. long, in staminate flowers much longer than in perfect flowers, filaments glabrous, anthers yellowish-brown; disk glabrous (densely white-villous in the original description), extrastaminal; ovary densely villous with yellowish hairs, rudimentary in staminate flowers and covered with densely long yellowish hairs, style nearly glabrous and about 2 mm long, stigma short and spreading or curved; pedicels slender, pilose, about 3-4 mm. long. Fruits, greenish-purple or yellowish-purple samaras; nutlets strongly convex and veined, nearly rounded, about 5 mm. in diameter, densely pubescent while young and then glabrous; wings included nutlets 3-3.5 cm. long 1 cm. broad, spreading horizontally or slightly backward.

MOUNT OMEI: Chiu-tien, alt. 1800 m., in forests, tree 15 metres high, leaves deep green above pale green below, young samaras green with purplish wings, occasionally, *T. C. Lee*, No. [illegible], July 23, 1940; Chiu-lao-tung, alt. 1800 m., *T. H. Tu*, No. *33*, in 1935; same locality, *H. C. Chow*, Nos. [illegible] & *7979*, July to September, 1938; same locality, in forests, small tree 12 metres high, samaras purplish common, *W. P. Fang*, No. *12796*, July 31, 1936; same locality, *S. S. Chien*, No. [illegible], July 11, 1937; same locality, *S. N. Hsu*, without number, in 1938; without precise locality, *C. H. Yao*, Nos. *4740*, *4165* & *4009*, in 1939.

SIKANG: Tien-chuan-hsien, ***K. L. Chu***, No. *2629*, in 1934.

Distribution: Shensi, Hupeh, Szechuan, Sikang, Yunnan.

This species was discovered by Dr. Augustine Henry at Wu-shan-hsien in Eastern Szechuan. It has been found very commonly in Eastern Szechuan and Western Hupeh. The distribution of this species is limited to the region which is bounded to the north by the Tsing-ling Range in Shensi, by Kang-tin-hsien in Sikang to the west and by Yi-liang-hsien in Yunnan to the south. On Mount Omei it occurs about half way of the mountain. The compact racemose inflorescences, the broadly ovate sepals which are densely villous on the inner surface, the glabrous disk and the strongly convex and

veined nutlets are quite enough to distinguish this species from closely allied ones...W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 10 times); 4, a staminate flowers (enlarged 10 times).]

圖版一百三十三

毛花槭

槭樹科

小喬木常高五至十公尺，稀達十五公尺；樹皮灰色或灰褐色；小枝細而無毛，當年生枝綠色或紫綠色，多年生枝灰色或褐灰色，常具多數顯著之卵形皮孔；冬芽小，橢圓形，鱗片六枚，邊緣具纖毛。葉對生，冬季凋落，紙質，基部圓形或楔形，偶亦成亞心臟形，長九至十一公分，寬八至十二公分，常五裂，稀七裂，裂片卵形或三角狀卵形，漸尖，除近基部全緣外，餘皆具密接而尖銳之鋸齒，裂片間凹穴漸尖，深及葉片全長三分之一或二分之一，葉表面深綠色，無毛，葉背面亮綠色，具顯明之網脈，微被絨毛，在大小側脈之腋間具叢生之淡白色絨毛；葉柄長四至九公分，圓柱形，纖細而光滑。花多數，大小蕊花及兩性花同株：着生於被毛之複圓錐狀總狀花序上，長九至十二公分，直徑十至十八公厘，着生於長二公分至三公分半之花梗上；萼片四枚，黃綠色，卵形或闊卵形，先端鈍形，外面無毛，內面被絲狀毛，邊緣尤多，長約一公厘半至二公厘；花瓣四枚，黃白色，倒卵形，微短於萼片；小蕊八本，長約三至四公厘，在小蕊花中之小蕊較在兩性花中者爲長，花絲無毛，花藥黃褐色；花盤無毛（原記載誤謂其具濃密之白色絲狀毛），生於小蕊之外圍；子房密生絲狀毛，在小蕊花中子房不發育，代以極密之淡黃色長毛。花柱近於光滑，長約二公厘，柱頭短，張開或彎曲；小花梗纖細，被細柔之毛，長約二至四公厘。果爲紫色或黃紫色之翅果；小堅果凸出成卵圓形並具脈紋，直徑約五公厘，幼嫩時被濃密之毛，長大後毛卽脫落；翅連小堅果長三公分至三公分半，寬一公分，伸展成一平面或略反捲。

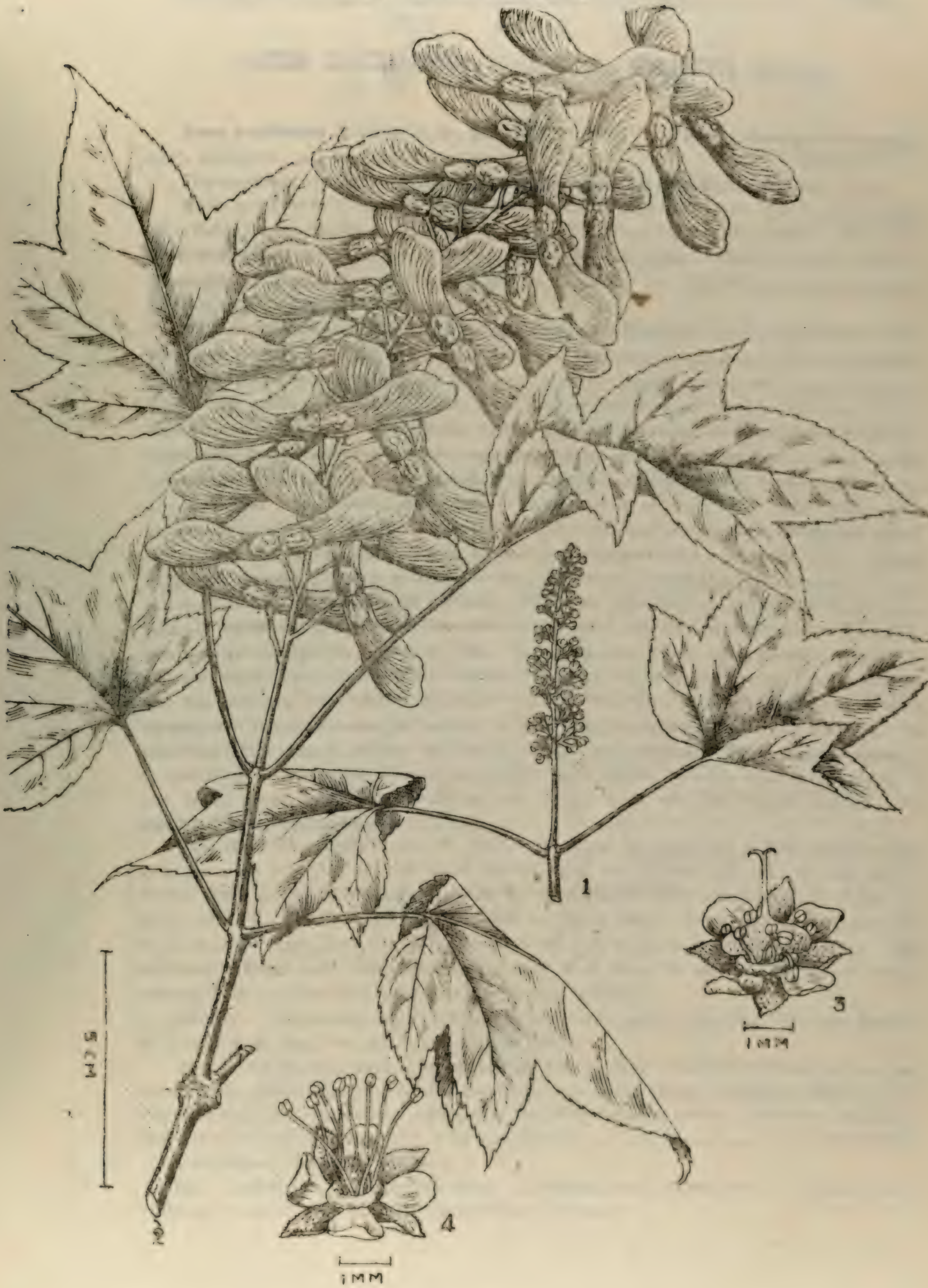
本種產於峨眉山之初殿及九老洞，海拔一千八百公尺之森林中。西康之天全縣亦產之。四月開花，九月果可成熟。

本種分佈於陝西，湖北，四川，西康及雲南等省。

本種爲亨利氏發見於川東之巫山縣。在湖北西部及四川東部，極爲常見。其分佈則北限於陝西之秦嶺，西限於西康之康定縣，南止於雲南之宜良縣。在峨眉山僅在山之中部產之。

此種密集之總狀花序，闊卵形萼片之內面具濃密之絲狀毛，無毛之花盤，以及小堅果特別凸出成卵圓形並具脈紋。均足使其與相近之種，易於辨別。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 兩性花（放大十倍）；4. 小蕊花（放大十倍）。



133. *Acer erianthum* Schwerin.

Plate 134.

ACER CAUDATUM Wallich var. PRATTII Rehder.

Aceraceae.

Acer caudatum Wallich, Pl. As. Rar. II (1831), 4, 28, t. 132, in part, description of staminate flower and synon. *Acer pectinatum* excl; Cat. 1228 (1828)?

This species is confined in the Sikkim-Himalayas and has not been found in China.

Acer caudatum Wallich var. **Prattii** Rehder in Sargent, Trees & Shrubs, I (1905), 164; II (1907), 26; in Fedde Repert. Nov. Spec. I (1905), 7; in Sargent, Pl. Wilson. I (1911), 91.- Leveille, Cat. Illustr. Pl. Seutcheouen, (1918), 178, mss.- Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China).- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 157; VIII (1932), 165; XI (1939), 101 (Monogr. Chin. Aceraceae).

Small deciduous tree usually 10 metres high, rarely up to 15 metres high, bark grey or dark grey; branchlets stout, those of the current year purple or purplish-green, densely yellowish-pubescent, those more than one year old grey or dark grey, glabrescent, with conspicuous elliptical lenticels. Winter-buds axillary, ovoid; outer scales ovate, densely yellowish-pubescent on the outer surface, inner accrescent scales obovate, acuminate, densely yellowish pubescent. Leaves opposite, deciduous, chartaceous, deeply cordate or cordate at base, from 8 to 12 cm. long, and usually as broad or slightly broader than long, 5-lobed, rarely 7-lobed; lobes triangular-ovate, acuminate, doubly and incisively serrate; sinuses acute, reaching about one-third to the middle of blade; upper surface deep green, glabrescent except yellowish-pubescent on the slightly impressed nerves; lower surface pale green, yellowish-pubescent, especially densely so on the nerves; petioles 4-9 cm. long, terete, densely yellowish-pubescent. Flowers andro-monoecious, in rufously villous compact terminal racemose panicles 8-10 cm. long, on pubescent peduncles 3-5 cm. long, appearing after the developing of leaves; sepals 5, yellowish-green, ovate or ovate-lanceolate, about 3 mm. long, sparsely pubescent outside; petals 5, yellowish-white, obovate or linear-obovate, acutish, 6 mm. long, glabrous; stamens 8, glabrous, slightly longer than petals in staminate flowers, as long as sepals in perfect flowers, inserted near the middle of disk, anthers purple, globose or oblong; disk lobed, glabrous; ovary densely covered with yellow tomentum, rudimentary in staminate flowers, style slender, 1.5 mm. long, with widely spreading stigmas; pedicels very slender, 5-8 mm. long, pubescent. Fruits, brownish samaras, in upright racemose fruiting inflorescences; nutlets subellipsoid, distinctly veined, 8 mm. long, 6 mm. broad; wings included nutlets 2.5 cm. long, 7 mm. broad, spreading erectly; pedicels very slender, 5-8 mm. long, pubescent.

MOUNT OMEI: Ta-cheng-ssu, alt. 2300 m., *T. H. Tu*, nos. *521* & *671*, in 1935; same locality, *S. S. Chien*, No. *6086*, July 12, 1937; same locality, small tree 6-12 m. high, bark blackish brown, flowers small, light green, common, *W. W. Ma*, No. *2560*, June 23, 1940; same locality, *W. W. Ma*, No. *2886*, July 16, 1940; Chieh-yin-tien, alt. 2539 m., small tree 8 metres high, flowers greenish, *W. P. Fang*, No. *18992*, June 18, 1942; Chin-ting, alt. 3135 m., *H. C. Chow*, No. *7708*, July 1, 1938; southwest of Mount Omei, Opien-hsien, Yen-ching-ki, *W. C. Cheng*, No. *6213*, in 1936; without precise locality, *C. W. Yao*, Nos. *2317*, *2743*, *4007*, *4297* & *4718*, in 1939.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, Nos. *2641*, *2770*, *3384* & *3499*, June 1936; same locality, *P. C. Tai* & *C. M. Teng*, Nos. *4341* & *4363*, August 1939.

This variety was discovered by Mr. A. E. Pratt at Kang-tin-hsien in Eastern Sikang and has been found only in Eastern Sikang and Western Szechuan. It is a very distinct variety and differs from the type species in the pubescent branchlets and in the pubescent lower surface of the leaves which have finer and closer serrations than those of the type species...W. P. Fang.

Distribution: Szechuan and Sikang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3. a perfect flower (enlarged 10 times); 4, a staminate flower (enlarged 10 time).

圖版一百三十四

巴特尖葉槭 變種

槭樹科

尖葉槭 別名：長尾槭。

本種之產地，限於喜馬拉雅山南部印度之哲孟雄，不產於中國。

巴特尖葉槭 變種

落葉小喬木，常高十公尺，稀達十五公尺，樹皮灰色或暗灰色；小枝粗壯，當年生之枝紫色或紫綠色，被濃密之淡黃色細毛，多年生之枝灰色或暗灰色，光滑毛無，皮孔顯著常成橢圓形；冬芽腋生，卵圓形，外鱗片卵形，被濃密之淡黃色細毛，內鱗花片長大後成倒卵形，漸尖，被濃密之淡黃色細毛。葉對生，紙質，冬季凋落，基部深心臟形或心臟形，長八至十二公分，寬與長相等或較寬，五裂稀七裂；裂片三角狀卵形，漸尖，具銳利之雙鋸齒；裂片間之凹穴銳尖，深及中裂片全長三分之一；葉表面深綠色，除在微凹之脈上具淡黃色毛外，餘皆光滑；背面淡綠色，被淡黃色絨毛，在脈上特別濃密；葉柄長四至九公分，圓形，被濃密之淡黃色絨毛。小蕊花與兩性花同株，着生於密集而頂生之總狀圓錐花序上，序長八至十公分，被紅褐色之絲狀長毛，花梗長三至五公分，被絨毛，長葉始開放；萼片五枚，黃綠色，卵形或卵狀披針形，長約三公厘、外面被稀疏之絨毛；花瓣五枚，黃白色，倒卵形或線狀倒卵形，鈍尖形，長六公厘，無毛；小蕊八本，無毛，在小蕊花中微長於花瓣；在兩性花中則與萼片等長，着生於花盤之中間，花藥紫色，圓球形或長圓形；花盤深裂，無毛；子房蓋被以濃密之黃色長毛，在小蕊花中不發育，花柱纖細，長一公厘半，具長而張開之柱頭；小花梗纖細，長五至八公厘，被絨毛。果為淡褐色之翅果，着生於直立之總狀果序上，小堅果呈亞橢圓形，具顯明之脈紋，長八公厘，寬六公厘；翅連同小堅果長二公分半，寬七公厘，直立伸張；果梗纖細，長五至八公厘，被絨毛。

本變種產於峨眉山之大乘寺，接引殿及金頂，海拔二千三百公尺至三千一百公尺之叢林中。峨眉山西南之峨邊縣鹽井溪及西康之天全縣亦產之。六月開花，九月果可成熟。

本變種分佈於四川及西康兩省。

本變種原為巴特氏發見現於西康之康定縣，其產地僅限於四川西部及西康東部。此變種之不同於原種者，在其有被毛之小枝及其邊緣具密鋸齒與背面被毛之葉。

圖解： 1. 花枝（原大）；2. 果枝（原大）；3. 兩性花（放大十倍）；4. 小蕊花（放大十倍）。



134. *Acer caudatum* Wallich var. *Prattii* Rehder



Plate 136.

ACER OBLONGUM Wallich.

Aceraceae.

Acer oblongum Wallich apud De Candolle, Prodr. I (1824), 593; Wallich, Pl. As. Rar. II (1831) 4.- Spach in Ann. Sci. Nat. 2 ser. II (1834), 165 (Rev. Acer.).- Bentham, Fl. Hongkong, (1861), 47, in part.- Brandis, For. Fl. Brit. Ind. (1874), 110.- Hiern in Hooker f. Fl. Brit. Ind. I (1875), 693.- Maximowicz in Bull. Acad. Sci. St.-Pettersb. XXVI (1880), 442, in part; in Mel. Biol. X (1880). 599, in part.- Nicholson in Gard. Chron. n. ser. XV (1881), 532.- Forbes & Hemsley in Journ. Linn. Soc. Bot. XXIII (1886), 141 (Ind. Fl. Sin.), in part.- Pax in Engler, Bot. Jahrb. VII (1886), 208; in Hooker, Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 31.- Wesmael in Bull. Soc. Roy. Bot. Belg. XXIX (1890), 42.- Dippel, Laubh. II (1892), 410, fig. 183.- Graf von Schwerin in Gartenfl. XLII (1893), 228.- Collett, Fl. Siml. (1902), 93.- Henry in Gard. Chron. XXXIII (1903), 62 (Chin. Maples).- Vietch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 353, 360, fig. 95.- Rehder in Sargent, Trees & Shrubs, I (1905), 179; in Sargent, Pl. Wilson. I (1911), 92; in Journ. Arn. Arb. VII (1926), 221; XV (1934), 5; Manual Cutl. Trees & Shrubs, (1927), 571.- Matsumura & Hayata in Journ. Coll. Sci. Imp. Univ. Tokyo, XXII (1906) (Enum. Fl. Formos.).- Schneider, Illustr. Handb. Laubh. II (1907), 214, figs. 141 c & 142 i-n.- Burhill in Record. Bot. Surv. IV (1910), 103.- Koidzumi in Journ. Coll. Sci. Imp. Univ. Tokyo, XXXII, art. I (1911), 55, t. 29 (Rev. Acer. Jap.).- Leveille, Cat. Pl. Yunnan. (1917), 252; Cat. Illustr. Pl. Sentcheouen. (1918), 179, mss.- Chun, Chin. Econ. Trees, (1921), 230.- Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).- Hu in Science, Sci. Soc. China, IX (1924), 840, excl.- Bean, Trees & Shrubs, hardy Brit. Isl. I (1929), 150.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 167, in part, specimens cited from Chekiang, Fukien, Kwangtung and a part from Hunan excl; VIII (1932), 170; XI (1939), 133.- Metcalf in Lingn. Sci. Journ. XI (1932), 194, in part.- Handel-Mazzetti, Symb. Sin. VII (1933), 641, in part, excl. specimens cited from Hunan.

Acer laurifolium D. Don, Prodr. Fl. Nepal. (1825), 249.

Acer oblongum var. 1, *glaucum* Graf von Schwerin in Gartenfl. XLII (1893). 228.

Acer Paxii Franchet var. *integrifolia* Leveille, Fl. Kouy-Tcheou, (1915), 383, name only.

Tree usually 10, rarely up to 20, metres high, bark grey or dark grey, rough, branchlets slender, those of the current year purple or purplish-green, glabrescent or sparsely pubescent, those more than one year old brown or greyish-brown, glabrous; winter-buds small, ellipsoid, scales imbricate, ovate, sparsely pubescent outside, ciliate on the margin. Leaves opposite, persistent, coriaceous, ovate-oblong or ovate, 8-11 cm. long, 3-4.5 cm. broad, entire, rounded or broadly cuneate at the base, acute or obtuse at the apex, upper surface deep green, glabrous, lower surface pale green, whitish glaucous, midrib and 5 to 6 pairs of lateral nerves conspicuous above, prominent below, the two basal lateral nerves reaching usually to one-third or one half of the blade; petioles 2-3 cm. long, slender, glabrous. Flowers numerous, green or yellowish-green, andro-monoecious, in whitish-pubescent corymbs, terminal on leafy branchlets; sepals, 5, oblong, obtuse, 3-4 mm. long; petals, 5, obovate, 5 mm. long; stamens 8, as long as or slightly longer than petals, slightly shorter in perfect flowers, filaments slender, glabrous, anthers rounded, yellow, 2-celled; disk extrastaminal, glabrous, slightly lobed; ovary compressed, pubescent, rudimentary in staminate flowers, style short and glabrous, stigmas recurved; pedicels 1-2 cm. long, slender, pubescent. Fruits, samaras, puple while young, brownish-yellow when matured; nutlets strongly convex, 7 mm. long, 5 mm. broad, pubescent while young, glabrescent when matured; wings included nutlets 2.5-3 cm. long, 8 mm. broad, spreading at acute angles; pedicels 2-3 cm. long, slender, sparsely pubescent or glabrescent.

MOUNT OMEI: Lei-yin-ssu, alt. 700 m., small tree 6 metres high, young samaras purple, *C. L. Chow*, No. *5972*, April 13, 1942; Hui [illegible], tree 8 metres high, fruits greenish, *W. P. Fang*, No. *19007*, June 28, 1942; Niu-hsin-ssu, alt. 950 m., small tree 5 metres high, flowers greenish-white, *W. P. Fang*, No. [illegible], April 16, 1942; [illegible], small tree 5 metres high, flowers greenish white, *W. P. Fang*, No. *18552*, April 18, 1942; en routie from Niu-hsin-ssu to Taping, alt. 1300 m., in forests, small tree 5 metres high, young samaras purple, *C. L. Sun*, No. *9023*, May 17, 1940; Pao-ku, alt. 1200

m., small tree 8 metres high, young fruits reddish. *W. P. Fang*, No. *18552*, April 28, 1942; same locality, on slopes, small tree 8 metres high, fruits purple, *T. C. Lee*, No. *3000*, July 25, 1940; Hou-tzu-po, alt. 1000 m., in forests, small tree 12 metres high, young samaras purple, *W. P. Fang*, No. *14662*, May 21, 1940; same locality, on slopes, small tree 6 metres high, fruits greenish-yellow, common, *T. C. Lee*, No. *2800*, July 12, 1940; She-tao-tui, alt. 1300 m., in forests, small tree 6 metres high, fruits purple, common, *T. C. Lee*, No. *2769*, July 12, 1940; same locality, in forests, small tree 8 metres high, fruits with green nuts and purple wings, occasionally, *T. C. Lee*, No. *3128*, August 1, 1940; Tien-chieh-feng, alt. 1400 m., small tree 5 metres high, flowers greenish, *W. P. Fang*, No. *18630*, April 16, 1942; near San-tou-chiao, in forests, small tree 6 metres high, bark brown, flowers greenish-white, *C. L. Sun*, No. *1736*, April 25, 1940; Hsi-hsin-so, alt. 1400 m., in forests, small tree 5 metres high, bark grey, flowers light green, *C. L. Sun*, No. *1921*, May 8, 1940; same locality, in forests, small tree 5 metres high, bark brown, *C. L. Sun*, No. *2248*, May 31, 1940; en routie from Hsi-hsin-so to Chu-tien, in forests, small tree 9 metres high, young samaras purple, *C. L. Sun*, No. *2213*, May 28, 1940; Chu-tien, alt. 1800 m., in forests, small tree 8 metres high, leaves glaucous beneath, rare, *W. P. Fang*, No. *14831*, May 21, 1940.

EASTERN SZECHUAN: Wu-ki-hsien, *K. L. Chu*, Nos. *1714* & *1717*, in 1935.

Distributions: Shensi, Hupeh, Szechuan, Kweichow, Yunnan: Himalaya.

This Himalayan species is widely distributed in Western China. Although all the characteristics are variable it is easily recognized by its ovate-oblong leaves, usually glaucous on the lower surface and by its convex nut-like samaras, pubescent while young and glabrescent when matured and with the wings spreading at acute angles……………………………………………………W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 5 times); 4, a staminate flower (enlarged 5 times).

圖版一百三十五

飛蛾槭

槭樹科

喬木常高十公尺，稀達二十公尺；樹皮灰色或暗灰色，粗糙；小枝纖細，當年生枝紫色或紫綠色，光滑或被稀疏之絨毛，多年生枝褐色或灰褐色，無毛；冬芽小，橢圓形，鱗片覆瓦狀排列，卵形，外面被稀疎之絨毛，邊緣具纖毛。葉對生，常綠，革質，卵狀長圓形或卵形，長八至十一公分，寬三至四公分半，全緣，基部圓形或寬楔形，先端銳尖或鈍形，表面深綠色，無毛，背面淡綠色，被淡白色之粉狀附着物，中脈及五至六對之側脈在葉表面顯明，在葉背面則突出，基部之二側脈常達葉片全長三分之一或二分之一；葉柄長二至三公分，細而無毛。花多數，綠色或黃綠色，小蕊花與兩性花同株，着生於被淡白色絨毛之繖房花序，頂生於着葉之小枝上；萼片五枚，長圓形，先端鈍形，長三至四公厘；花瓣五枚，倒卵形，長五公厘；小蕊八本，與花瓣等長或稍長，在兩性花中則較短，花絲纖細而無毛，花藥圓形，黃色，二室；花盤生於小蕊之外圍，無毛，微裂；子房扁形，被絨毛，在小蕊花中不發育，花柱短而無毛，柱頭反捲；花梗長一至二公分，纖細，被絨毛。果爲翅果，幼嫩時爲紫色，長成時爲褐黃色；小堅果凸出成長卵圓形，長七公厘，寬五公厘，幼嫩時有毛，長成時無毛；翅連小堅果長二公分半至三公分，寬八公厘，伸張成銳角；果梗長二至三公分，細而光滑，或被稀疏之絨毛。

此種產於峨眉山之雷音寺，會佛寺，牛心寺，猴子坡，蛇倒退，天池峯，息心所及初殿，海拔七百公尺至一千八百公尺之森林中或路旁。川東之巫溪縣亦產之。四月開花，八月果可成熟。

此種分佈於陝西，湖北，四川，貴州，雲南；印度之喜馬拉雅山。

本種原產於喜馬拉雅山，分佈於華西各省。其特性雖時有變異，但以葉爲卵狀長圓形，葉背面被白粉，且凸出如長卵之小堅果，幼嫩時有毛，成熟時則光滑，其翅則伸張爲銳角，故易辨別。

圖解： 1. 花枝（原大）； 2. 果枝（原大）； 3. 兩性花（放大五倍）； 4. 小蕊花（放大五倍）。



135. Acer oblongum Wallich

Plate 136.

ACER FABRI Hance.

Aceraceae.

Acer Fabri Hance in Journ. Bot. XXII (1884), 76.— Pax in Engler, Bot. Jahrb. VII (1886), 210; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 271.— Forbes & Hemsley in Journ. Linn. Soc. Bot. XXIII (1886), 140.— Wesmael in Bull. Soc. Roy. Bot. Belg. XXIX (1890). 42 — Graf von Schwerin in Gartenfl. XLII (1893), 229.— Bretschneider, Hist. Europ. Bot. Discover. China. (1898), 956.— Dunn in Kew Bull. Add. Ser. X (1912), 67 (Fl. Hongkong & Kwangtung).— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Merrill in Lingn. Sci. Journ. V (1927), 117.— Metcalf in Lingn. Sci. Journ. XI (1932), 204, in part, excl. specimen cited Ching's 7383 from Kwangsi.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 172.

Acer oblongum Wallich var. *concolor* Pax in Hooker Icon. Pl. XIX (1889), under t. 1897; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449. (Fl. Centralchina), in part, incl. specimen cited Henry's 7677 from Hupeh; in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 32, in part, incl. specimen cited Henry's 7677 from Hupeh.— Graf von Schwerin in Gartenfl., XLII (1893), 229.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 62.— Rehder in Sargent, Trees & Shrubs, I (1905), 180, in part.— Metcalf in Lingn. Sci. Journ. XI (1932), 196, in part, incl. specimen cited Henry's 7677 from Hupeh.

Acer laevigatum Wallich var. *Fargesii* (Rehder) Sargent apud Veitch in Journ. Roy. Hort. Soc. XXIX (1904), 353, 360, fig. 91.

Acer laevigatum Pax (non Wallich) in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 32, in part, incl. specimen cited from Canton & syn. *Acer Fabri*.— Rehder in Sargent, Trees & Shrubs, I (1905), 180, in part, incl. syn *Acer Fabri*.

Acer Fargesii Franchet apud Rehder in Sargent, Trees & Shrubs, I (1905), 180; in Fedde Repert. Nov. Spec. Reg. Veg. I (1905), 7.

Acer Prainii Leveille in Fedde Repert. Nov. Spec. Reg. Veg. X (1912), 432; Fl. Kouy-Tcheou, (1915), 383.

Acer cordatum Pax, var. *microcordatum* Metcalf in Lingn. Sci. Journ. XI (1932), 199, in part, incl. specimen cited Chun's 6700 from Hainan.

Acer Fabri Hance var. *rubrocarpum* Metcalf in Lingn. Sci. Journ. XI (1932), 206, in part, incl. specimens cited Ching's 5998 from Kwangsi, Fang's 784 & 824 from Szechuan, Tso's 20299 & 20950 from Kwangtung.— Handel-Mazzetti, Symb. Sin. VII (1933), 641.— Rehder in Journ. Arn. Arb. XV (1934), 6.

Acer reticulatum Metcalf (non Champion) in Lingn. Sci. Journ. XI (1932), 206, in part, incl. specimen cited Ching's 7850 from Kwangsi.

Small tree, usually about 12 metres high, rarely to 15 metres high, bark brownish-grey or blackish-grey; branchlets terete, slender, glabrous, those of the current year green or purplish-green, those more than one year old brownish-green; winter-buds small, ellipsoid, scales ovate, imbricate, pubescent outside, ciliate on the margin, accrescent scales oblanceolate, pubescent along the middle. Leaves opposite, persistent, coriaceous, lanceolate, oblong-lanceolate or oblong-oblanceolate, 9-12 cm. long, 2.5-3.5 cm. broad, cuneate or broadly cuneate at the base, acuminate or caudate-acuminate on the apex, entire on the margin, upper surface deep green, glabrous, very smooth, lower surface pale green, glabrous rarely with tufts of pubescence at the axils of nerves, midrib conspicuous above, prominent below, lateral nerves 5-7 pairs conspicuous on both surfaces; petioles stout, 1-1.5 cm. long, grooved above, rounded below. Flowers andro-monoecious, in glabrous, paniculate corymbs; sepals 5, purple, ovate or ovate-oblong, 5 mm. long, sparsely pubescent outside; petals 5, white, obovate, shorter than sepals; stamens 8, usually 6-8 mm. long, shorter in perfect flowers, filaments glabrous, anthers yellow, ellipsoid, 2-celled; ovary compressed, glabrous, style short, stigmas recurved. Fruits, purple samaras, with ellipsoid nutlets 6 mm. long, 3 mm. in diameter and wings 2-2.5 cm. long, 8-10 mm. broad, spreading at obtuse or right angles; pedicels 1-1.5 cm. long, very slender, glabrous.

MOUNT OMEI: Lei-yin-ssu, alt. 700 m., small tree 14 metres high, young samaras purple, *C. L. Chow*, No. *5971*, April 28, 1942; Ching-yin-ko, alt. 960 m., small tree 6 metres high, samaras with purple wings. *W. P. Fang*. No. *12543*, July 27, 1938; near Hung-chun-ping, alt. 1147 m., on slopes, small tree 8 metres high, flowers purple, *T. C. Lee*, No. *4426*, March 27, 1940; same locality, in woods, small tree 4 metres high, flowers purple, *C. L. Sun*, No. *1655*, April 22, 1940; She-tao-tui, alt. 1300 m., in thickets, small tree 5 metres high, flowers purple, common, *T. C. Lee*, No. *4496*, April 2, 1940; Ta-ping, alt. 1400 m., *H. C. Chow*, No. *8150*, August 14, 1938; same locality, in woods, small tree 4 metres high, samaras purple, *C. L. Sun*, No. *2017*, May 17, 1940; same locality, in forests, small tree 5 metres high, flowers purple, *W. P. Fang*, No. *16074*, April 1941; Pao-ku, shrub 3 metres high, flowers with purple sepals and green petals, *W. P. Fang*, Nos. *18262* & *18284*, April 1, 1942; San-tou-chiao, alt. 1500 m., *W. P. Fang*, No. *17491*, August 9, 1941.

SZECHUAN: Nanchuan-hsien. *T. H. Tu*, No. *2871*, April 20. 1932; same locality, *K. L. Chu*, Nos. *877*, *1566* & *1587*, in 1934; Kuan-hsien, Mount Tsing-cheng, in forests, tree 14 metres high, *S. S. Chien*, No. *5656*, May 24, 1936.

SIKANG: Tien-chuan-hsien, alt. 1360., small tree 5 metres high, *K. L. Chu*, No. *2308*, April 9, 1936.

KWANGSI: without precise locality, *C. Wang*, No. *39412*; without precise locality, *Z. S. Chung*, No. *81726*.

Distribution: Kiangsi, Hupeh, Szechuan, Kweichow, Kwangtung, Kwansi.

This species was discovered by the late Dr. Faber in 1883 at Lo-fau-shan in Kwangtung province. It is very near *Acer laevigvtum* Wallich. From that species it differs in having the smooth leaves which are not prominent netted even after drying. The wings spread at obtuse or right angles and the samaras are usually purple, rarely changing to yellowish after drying. On Mount Omei it is usually found on the lower slopes, below 1400 metres in altitude..............................W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 5 times); 4, a staminate flower (enlarged 5 times).

圖版一百三十六

費伯槭

槭樹科

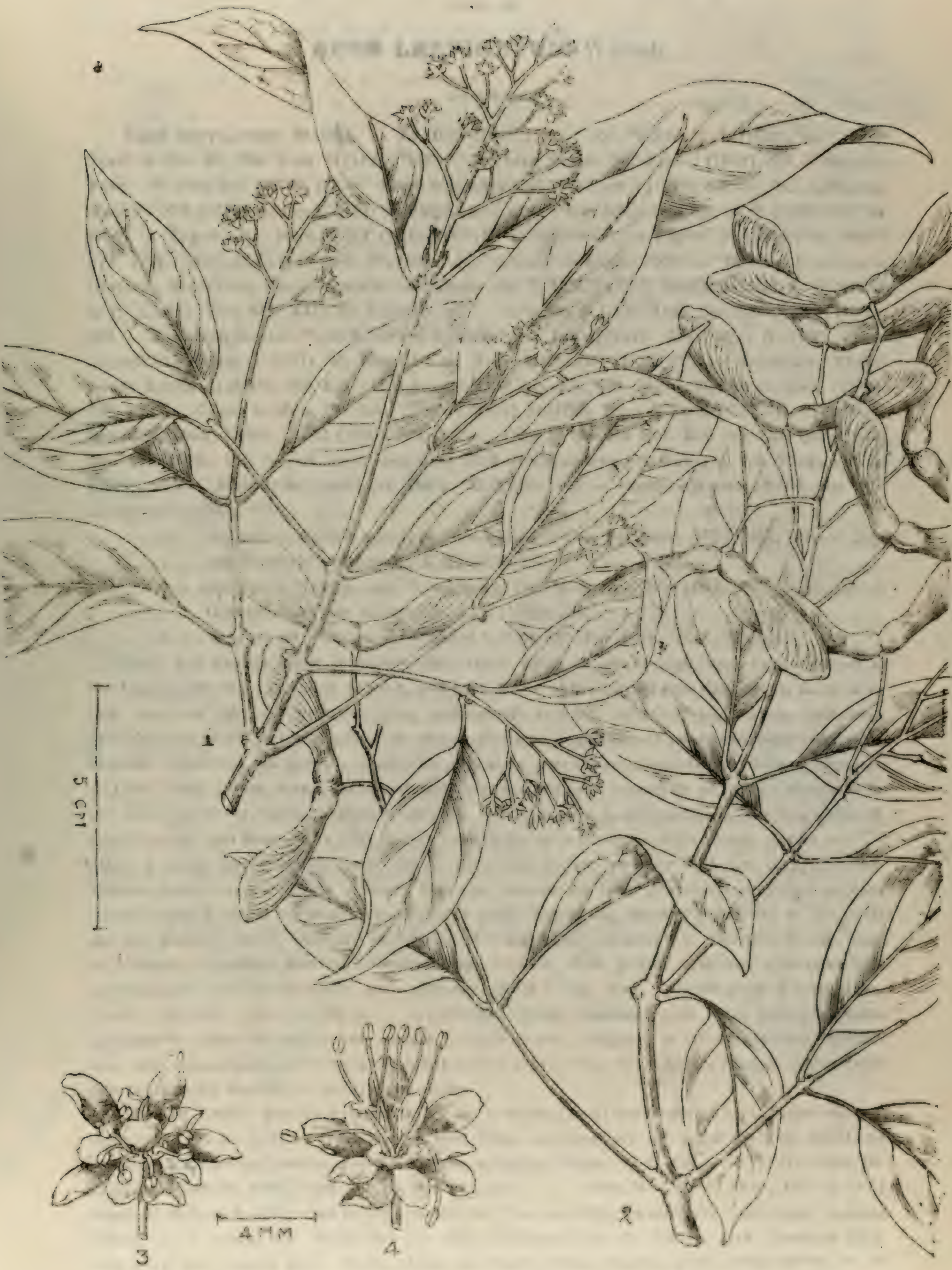
小喬木，常高十公尺，稀達十五公尺；樹皮褐灰色或黑灰色；小枝細圓而無毛，當年生枝綠色或紫綠色，多年生枝褐綠色；冬芽小，橢圓形，鱗片卵形，覆瓦狀排列，外面被絨毛，邊緣具纖毛，開花後長大之鱗片爲倒披針形，背面之中脊被絨毛。葉對生，宿存，革質，披針形，長圓披針形或長圓倒披針形，長九至十二公分，寬二公分半至三公分半，基部楔形或寬楔形，先端漸尖或尾狀漸尖，全緣，葉表面深綠色，無毛，甚平滑，背面灰綠色，無毛，葉脈腋間亦稀具叢生之絨毛，中脈在葉表面顯明，在葉背面則突出，側脈五至七對，在葉兩面皆甚顯著；葉柄粗壯，長一公分至一公分半，上面有溝，下面渾圓。花爲小蕊花與兩性花同株，着生於無毛之圓錐狀繖房花序；萼片五枚，紫色，卵形或卵狀長圓形，長五公厘，外被稀疏絨毛；花瓣五枚，白色，倒卵形，較萼片短；小蕊八本，常長六至七公厘，在兩性花中則較短，花絲無毛，花藥黃色，橢圓形，二室；子房扁形，無毛，花柱短，柱頭反捲。果爲紫色之翅果，小堅果橢圓形，長六公厘，直徑三公厘，翅長二公分至二公分半，寬八至十公厘，伸張成鈍角或直角；果梗長一公分至一公分半，纖細，無毛。

此種產峨眉山之雷音寺，清音閣，洪椿坪，蛇倒退，大坪及三道橋等處，海拔七百公尺至一千四百公尺之叢林或草坡。四川之南川縣，灌縣及西康之天全縣亦產之。三四月開花，九月果始黃熟。

此種分佈於江西，湖北，四川，貴州，廣東及廣西等省。

此種爲費伯博士於一八八三年發見廣東之羅浮山。與光葉槭相近。所不同者，在其有平滑之葉，乾枯後，其網脈亦不顯著，果翅伸張爲鈍角或直角，翅果乾後常爲紫色，稀變爲淡黃色。此種在峨山之分佈，常在一千四百公尺以下之地。

圖解：1.花枝（原大）；2.果枝（原大）；3.兩性花（放大五倍）；4.小蕊花（放大五倍）。



136. Acer fabri Hance



Plate 137.

ACER LAEVIGATUM Wallich.

Aceraceae.

Acer laevigatum Wallich, Pl. As. Rar. II (1831), 3, t. 104; Wallich, Cat. (1828), no. 1[illegible].— Spach in Ann. Sci. Nat. 2 ser. II (1834), 166.— Walpers, Repert. Bot. Syst. I (1842), 4[illegible].— Brandis, Forest. Fl. Brit. Ind. (1874), 1[illegible].— Hiern in Hooker f. Fl. Brit. Ind. I (1875), 693.— Pax in Hooker Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), [illegible] ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Central China); in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 22, in part, excl. Syn. cited *Acer reticulatum* & *Acer Fabri*.— Graf von Schwerin in Gartenfl., XLII (1893), 23[illegible].— Henry in Gard. Chron. ser. 3, XXXIII (1903), 62 (Chin. Maples).— Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 360.— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 482.— Rehder in Sargent, Trees & Shrubs, I (1905), 180, in part, excl. *Acer Fabri*; II (1907), [illegible], in Sargent Pl. Wilson. I (1911), 92; Manual Cult. Trees & Shrubs, (1927), 572.— Schneider, Illustr. Handb. Laubh. II (1907), 212, figs. 141 d & 142 b-f.— Leveillé, Cat. Illustr. Pl. Seutcheonen. (1918), 178, mss.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— in Notes Roy. Bot. Gard. Edinb., XVII (1930), 304, [illegible].— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 107, in part, excl. specimens cited from Kwangtung & Kwangsi; VIII (1932), 172; XI (1939), 154.— Metcalf in Lingn. Sci. Journ. XI (1932), 207.— Handel-Mazzetti, Symb. Sin. VII, Lieferung 3 (1933), 641.

Acer laevigatum Wallich var. 1, *typicum* Pax in Engler, Bot. Jahrb. VII (1886), 200.— Graf von Schwerin in Gartenfl., XLII (1893), 239.

Acer laevigatum Wallich, var. 2, *angustum* Pax in Engler, Bot. Jahrb. VII (1886), [illegible].— Graf von Schwerin in Gartenfl., XLII (1893), 239.

Acer oblongum var. *laevigatum* Wesmael in Bull. Soc. Bot. Belg. XXIX (189[illegible]), 42.

Small tree usually about 10 metres high, rarely up to 15 metres high, bark brownish-grey or black-grey, smooth, branchlets slender, glabrous, those of the current year light green, those more than one year old deep green or grey; winter-buds axillary, ellipsoid, scales ovate, imbricate, glabrous, accrescent scales obovate or oblong-obovate, densely grey-pubescent outside. Leaves opposite, persistent, coriaceous, smooth but reticulate after drying, lanceolate or oblong-lanceolate, 6-15 cm. long, 4-5 cm. broad, cuneate or broadly cuneate at base, acuminate or shortly acuminate on the apex, entire or rarely remotely serrulate near the apex, upper surface deep green, glabrous, lower surface light green, with tufts of grey hairs at the axils of nerves while young, midrib and 7-9 pairs of lateral nerves conspicuous above, prominent below; petioles 5-15 mm. long, glabrous. Flowers andro-monoecious, in glabrous corymbs terminal on leafy branchlets appearing after the leaves; sepals 5, purplish-green, ovate-oblong or ovate, [illegible] mm. long, sparsely pubescent on the outer surface; petals 5, white, obovate, emarginate, 4-5 mm. long, stamens 6-8, glabrous, 6 mm. long, rudimentary in pistillate flowers, anthers oblong, 2-celled, disk purple, glabrous, extrastaminal; ovary purple, slightly pubescent, style glabrous, about 6 mm. long; pedicels about 6-7 mm. long, slender, glabrous; pedicels 4.5 cm. long, glabrous. Fruits, samaras, purple while young, greenish or brownish-yellow when matured; nutlets strongly convex, ellipsoid or ellipsoid-oblong, about 6 mm. long, 3 mm. in diameter; wings included nutlets 3-4 cm. long, 1 cm. broad, straight or introrsely falcate, spreadig at obtuse or rarely acute angles.

MOUNT OMEI: near Fu-hu-ssu, alt. 600 m., in woods, small tree 9 metres high, leaves smooth, leathery, *W. P. Fang*, No. *12507*, May 26, 1938; Lung-men-tung, alt. 500 m., at roadside, small tree 10 metres high, young samaras with horizontally spreading wings, *W. P. Fang*, No. *14170*, April 28, 1940; same locality, tree 20 metres high, flowers green, *C. L. Chow*, Nos. *5636*, *5684*, *5770* & *5772* March 31 to April 6, 1942; same locality, small tree 14 metres high, leaves green, coriaceous, samaras purple, *C. L. Chow*, No. *6059* May 20, 1942; Tieh-so-chiao, alt. 548 m., tree 12 metres high, with grey and smooth bark, leaves oblong or elliptic-oblong, samaras green, occasionally, *W. P. Fang*, No. *14452*, June 3, 1940; same locality, *C. L. Chow*, No. *577[illegible]*, April 6, 1942; Ta-o-ssu, alt. 1103 m., in shaded wooded slopes, small tree 8 metres high, *S. S. Chien*, No. *5474*, May 4, 1936

Hung-chun-ping, alt. 1147 m., in forests, small tree 18 metres high, *C. L. Sun*, No. *1701*, April 25, 1940; without precise locality, *C. W. Yao*, No. *3552*, in 1939; without precise locality, *W. C. Cheng*, No. *10575*, June 10, 1940.

WESTERN SZECHUAN: Kuan-hsien, Mt. Tsing-cheng, at the side of a brook, small tree 7 metres high, flowers greenish-white, *W. P. Fang*, No. *12209*, April 1933.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, No. *3131*, July 17, 1936.

Distribution: Shensi, Hupeh, Szechuan, Sikang, Kweichow, Yunnan; Burma, Sikkim-Himalayas.

This Himalayan species is distributed from the Sikkim-Himalayas eastward to Southwest China. On Mount Omei it is usually found in forests at the foot of the mountain. The leaves are entire and smooth while flesh but change to reticulate after drying . . . . W. P. Fang.

Fig. 1, a flowrring branch (natural size); 2, a fruiting branch (natural size); 3, a perfect flower (enlarged 10 times); 4, a staminate flower (enlarged 10 times).

圖版一百三十七

光葉槭

槭樹科

小喬木，常高十公尺，稀達十五公尺；樹皮灰褐色或黑灰色，光滑；小枝細而無毛，當年生枝淡綠色，多年生枝深綠色或灰色；冬芽腋生，橢圓形，鱗片卵形，覆瓦狀排列，無毛，開花後長大之鱗片倒卵形或長圓狀卵形，外被濃密之灰色絨毛。葉對生，常綠，革質，新鮮時平滑，乾後則網脈顯露，披針形或長圓狀披針形，長十至十五公分，寬四至五公分，基部楔形或廣楔形，先端漸尖或短漸尖，全緣或近先端處有稀疏之鋸齒，葉表面深綠色，無毛，背面淡綠色，幼嫩時脈腋間有叢生之灰色絨毛，中脈及七至九對之側脈在葉表面顯著，在葉背面則突出；葉柄長五至十五公厘，無毛。小蕊花與兩性花同株，着生於無毛之繖房花序上，花序頂生於着葉之枝上，發葉後始開放；萼片五枚，紫綠色，卵狀長圓形或卵形，長三公厘，外面被稀疏之毛，花瓣五枚，白色，倒卵形，先端微現凹形，長四至五公厘；小蕊六至八本，無毛，長六公厘，在大蕊花中不發育，花藥長圓形，二室；花盤紫色，無毛，生於小蕊外圍；子房紫色，微被毛，花柱無毛，長約六公厘；花梗長約六至八公厘，細而無毛。果為翅果，幼嫩時為紫色，成熟時為淡綠色或褐黃色；小堅果極凸出，橢圓形或橢圓狀長圓形，長約六公厘，直徑三公厘；翅連小堅果共長三至四公分，寬一公分，直伸或成內彎之鐮形，張開成鈍角，稀成銳角。

本種產峨眉山之伏虎寺，龍門洞，鐵索橋，大峨寺及洪椿坪等處，海拔五百公尺至一千一百公尺左右之森林中或路旁。川西之灌縣青城山，西康之寶興縣亦產之。三四月開花，八月果可成熟。

本種分佈於陝西，湖北，四川，西康，貴州，雲南，緬甸及印度之哲孟雄。

本種原產喜馬拉雅山，東向分佈達於中國西南部。在峨眉山則習見於山麓。其葉在新鮮時平滑而全緣，乾後則脈網顯露。

圖解：1.花枝（原大）；2.果枝（原大）；3.兩性花（放大十倍）；4.小蕊花（放大十倍）。



137. *Acer laevigatum* Wallich

Plate 138.

ACER DAVIDI Franchet.

Aceraceae.

Acer Davidi Franchet in Nouv. Arch. Mus. Paris, ser. 2, VIII (1884), 212 (Pl. David. II. 30); in Bull. Soc. Bot. France, XXXIII (1886), 464; Pl. Delavay. (1889), 145.— Pax in Engler, Bot. Jahrb. VII (1886), 216; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 272; in Hooker Icon. Pl. (1889), under t. 1897; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 449 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 36.— Graf von Schwerin in Gartenfl. XLII (1893), 230.— Bretschneider, Hist. Europ. Bot. Discov. China, (1898), 859.— Henry in Gard. Chron. ser. 3. XXXIII (1903), 62 (Chin. Maples).— Veitch in Journ. Roy. Hort. Soc. XXIX, pt. 3 (1904), 348, 360, figs. 86 & 90.— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 167, t. 83; II (1907), 26, in part; in Sargent, Pl. Wilson. I (1911), 92; III (1917), 426; in Journ. Arn. Arb. VII (1926), 221; VIII (1927), 163; IX (1928), 90; XIV (1933), 213, 346; XV (1934), 5; Manual Cult. Trees & Shrubs (1927), 572.— Schneider, Illustr Handb. Laubh. II (1907), 216, figs. 143 k-m 144 d.— Pavolini in Nuov. Giorn. Bot. Ital. n. ser. XV (1908), 409 (Contrib. Fl. Hupe).— Matsumura in Icon. Pl. Koisikavenses, I (1911), 21, t. 11.— Diels in Notes Roy. Bot. Gard. Edinb. VI (1912), 175.— Leveille, Cat. Pl. Yunnan (1917), 153; Cat. Illustr. Pl. Scutcheouen, (1918), 178 mss.— Bailey, Gent. Herb. (1920), 35.— Chun. Chin.Econ. Trees (1921) 230; in Hu & Chun, Icon. Pl.Sin. I (1927), 35, t. 35.— Hu in Science, Sci. Soc. China, VI (1921), 1166; IX (1924), 840.— Thatcher in Gard. Chron. LXXII (1922), 119.— Hers in Journ. N. China Branch. Roy. As. Soc. LIII (1922), 160; Liste Ess. Lign. Honan Sept. (1922), 1.— Chung in Mem. Sci. Soc. China, I (1924), 148 (Cat. Trees & Shrubs China).— Notes Roy. Bot. Gard. Edinb. XIV (1924), 209, 242, 275, 368, 383; XVII (1930), 257, 288, 292, 343.— Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 140.— T. Tang in Bull. Fan Mem. Inst. Biol. II (1931), 100, 105.— Y. Tang in Bull. Fan Mem. Inst. Biol. III (1932), 13. 197.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 174; VIII (1932), 177; XI (1939), 166.— Handel-Mazzetti, Symb. Sin. VII (1933), 641.

Acer Hookeri Forbes & Hemsley (non Miquel) in Journ. Linn. Soc. Bot. XXIII (1886), 140 (Ind. Fl. Sin.).
Acer Davidi Franchet var. *glabrescens* Pax in Hooker Icon. Pl. XIX (1889), under t. 1897.
Acer sikkimense subsp. *Davidi* Wesmael in Bull. Roy. Soc. Bot. Belg. XXIX (1890), 44.
Acer Davidi Franchet var. 1. *tomentellum* Graf von Schwerin in Gartenfl. XLII (1893), 230.
Acer laxiflorum Pax var. *ningpoense* Pax in Engler, Pflanzenreich, Heft 8. (IV. 163), (1902), 35.
Acer Cavaleriei Leveille in Fedde, Rep. Nov. Spec. X (1911), 432; Fl. Kony-Tcheou (1915), 383.
Acer sterculiaceophyllum Leveille (non Hiern), Fl. Kouy-tcheou, (1915), 383.
Acer laxiflorum (non Pax). Notes Roy. Bot. Gard. Edinb. XIV (1924), 353.
Acer Davidi Franchet var. Notes Roy. Bot. Gard. Edinb. XVII (1929), 13.
Acer horizontale Fanchet, mss. in Herb. Paris.

Small tree usually 10 metres high, rarely up to 15 metres high; bark smooth, green or darkish green; branchlets slender, glabrous, those of the current year brownish-green or purplish-green, those more than one year old yellowish or darkish brown. Winter-buds axillary, small, conical, glabrous; accrescent scales lanceolate or oblanceolate, 3-3.5 cm. long, glabrous inside, densely yellowish-pubescent outside. Leaves opposite, deciduous, chartaceous, ovate or oblong-ovate, 8-12 cm long, 5-8 cm. broad, acuminate or rarely caudate at the apex, subcordate or rounded at the base, appressed serrate with unequal crenates on the margin, midrib and 7-13 pairs of primary veins just showing above, prominent below, upper surface dark green, glabrous, lower surface pale green, rufously pubescent on the veins while young, then glabrescent when matured; petioles 3-6 cm. long, slender, rufously pubescent while young and becoming glabrous when matured. Flowers yellowish-green, andro-monoecious, in pendulous, sparsely yellow-pubescent racemes usually terminal on leafy branchlets, appearing while the developing of leaves; staminate flowers on pedicels 3-5 mm. long, usually 9 to 25 flowers in racemes 4-10 cm. in length; sepals 5, greenish-yellow, glabrous, herbaceous, ovate, 3-4 mm. long; petals 5, yellowish or yellowish-white, membranaceous, obovate, 3-4 mm. long, 2 mm. broad; stamens 8, about 3 mm. long, filaments slender, glabrous, anthers yellow, ellipsoid, 2-celled, disk intrastaminal, glabrons, slightly lobed, ovary absent or rudimentary; perfect flowers on pedicels 1-1.5 cm. long, usually 15 to 30 flowers in racems 7 to 12 cm in length; sepals and petals are the same as in the staminate flower, stamens 1-1.5 mm. long, ovary compressed, rufous-pubescent, style glabrous, stigmas slender and revolute. Fruits brownish-green or brownish-yellow samaras, in pendulous fruiting racemes; nutlets flat, glabrous, 6-8 mm. long, 5 mm. broad; wings included nutlets 2.6-2.8 cm. long, 8 mm. broad, usually spreading at obtuse angles or horizontally; pedicels 1-1.5 cm. long, slender. glabrous.

MOUNT OMEI: near Ta-o-ssu, alt. 1103 m., in forests, tree 10 metres high, flowers green, *C. L. Sun*, No. *36*, May 3, 1939; Ching-yin-ko, alt. 950 m., tree 8 metres high, *W. P. Fang*, No. *15948*, March 27, 1941; Hei-lung-kiang, alt. 900 m., small tree 8 metres high, flowers green, *C. L. Sun*, No. *1429*, March 19, 1940; Niu-hsin-ssu, alt. 930 m., small tree 8 metres high, *W. P. Fang*, No. *18588*, April 16, 1942; near Wan-nien-ssu, alt. 1041 m., at roadside, small tree 10 metres high, flowers green, *C. L. Sun*, No. *1479*, April 11, 1940; Hou-tzu-po, alt. 1000 m., in woods, tree 8 metres high. *C. L. Sun*, No. *1729*, April 26, 1940; same locality, on slopes, small tree 7 metres high, samaras green with purple wings, rare, *C. L. Sun*, No. *2797*, July 12, 1940; Ta-ping, alt. 1400 m., in thickets, tree 10 metres high, rare, *W. P. Fang*, No. *16653*, May 20, 1941; same locality, small tree 5 metres high, flowers green, *W. P. Fang*, No. *18469*, April 20, 1942; Hsin-kai-ssu, alt. 1600 m., small tree 7 metres high, samara green, *C. L. Chow*, No. *6156*, May 21, 1942; Pao-ku, small tree 5 metres high, flowers greenish, *W. P. Fang*, No. *18276*, April 1, 1942; Hsi-hsin-so, alt. 1400 m., in forests, small tree 9 metres high, samaras green, *C. L. Sun*, No. *2256*, May 31, 1940; Pien-dan-ai, alt. 1400 m., small tree 7 metres high, flowers greenish, *W. P. Fang*, No. *16318*, April 26, 1941;

Chiu-lao-tung, alt. 1800 m., in thickets, small tree 4 metres high, flowers green, rare, *C. L. Sun*, no. *195*, May 12, 1939; Yu-hsien-ssu, alt. 1771 m., in forests, small tree 7 metres high, samaras purplish, rare, *W. P. Fang*, No. *12360*, August, 1, 1938; Hua-yen-ting, alt. 1950 m., under forests, small tree 1 metres high, flowers purple, *W. P. Fang*, No. *13860*, February 29, 1940; southwest of Mount Omei, Opien-hsien, Yen-ching-chi, *W. C. Cheng*, *6272*, in 1936; without precise locality, *T. H. Tu*, No. *79*, in 1938; without precise locality, *S. N. Hsu*, No. *568*, in 1938; without precise locality, *C. W. Yao*, No. *4050*, in 1939.

SZECHUAN: northeastern corner of Szechuan, *K. L. Chu*, No. *1372*, in 1935; Nanchuan-hsien *K. L. Chu*, No. *899*, in 1935; same locality, *Y. C. Yang*, Nos. *3010*, *3046*, *3047* & *3147*, in 1939 Kuan-hsien, Mount Tsing-cheng, in forests, small tree 8 metres high, flowers green, in racemes 16 cm. in length, common, *W. P. Fang*, No. *12138*, April 10, 1938.

SIKANG: Tien-chuan-shien, on slopes, small tree 5-10 meter high, samaras green, *F. C. Tai* & *C. M. Teng*, No. *5172*, & *5301*, September to October 1939.

KWANGSI: without precise locality, *C. Wang*, No. *39377*, without date.

Distribution: Hopei, Shansi, Shensi, Kansu, Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Kweichow, Yunnan, Kwangtung, Kwangsi.

This species is widely distributed in China having been found in various provinces. It occurs commonly on the lower slopes of Mount Omei from 500 to 2000 metres above sea level. The pubescence on the veins of the lower surface of leaves is very variable, but the veins are usually densely pubescent while the leaves are young and glabrescent when they are matured. The only character which distinguished this species from the others is the dentate-serrate margin of the leaves, other species usually having serrulate-teeth on the margin............................W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch (natural size); 3, a staminate flower (enlarged 10 times); 4, a pistillate flower (enlarged 10 times).

Acer Davidi Franchet var. **acuminifolium** Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. XI (1939), 177 (Monog. Chin. Acer.).

MOUNT OMEI: Yu-hsien-ssu, alt. 1771 m., *T. T. Yu*, No. *462*, April 20, 1932; Chiu-lao-tung, alt. 1800 m., in thickets, small tree 8 metres high, flowers dark purple, *C. L. Sun*, No. *1589*, April 18, 1939; Tsuan-tien-po, alt. 2000 m., in thickets, small tree 8 metres high, *C. L. Sun*, No. *283*, May 29, 1939; southwest of Mount Omei, *T. C. Chiao*, Nos. *16* & *30*, in 1938.

SIKANG: Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, No. *4238*, July 22, 1938.
Distribution: Szechuan and Sikang.

This variety differs from the species in having the ovate-oblong leaves which are sharply serrulate with appressed teeth on the margin, caudate-acuminate on the apex and with persistent yellow pubescence on the veins on the lower surface of the leaves. This variety is limited in distribution to southwestern Szechuan and Eastern Sikang..W. P. Fang.

Fig. 5, a leaf (natural size).

圖版一百三十八

大衛槭 別名：青皮槭。

槭樹科

小喬木高十公尺，稀達十五公尺；樹皮平滑，綠色或暗綠色；小枝纖細而無毛，當年生枝褐綠色或紫綠色，多年生枝淡黃色或暗褐色。冬芽腋生，小而呈圓錐狀，無毛；開花後發育之鱗片披針形或倒披針形，長三至三公分半，裏面無毛，表面被濃密之淡黃色絨毛。葉對生，冬季凋落，紙質，卵形或長圓卵形，長八至十二公分，寬五至八公分，先端漸尖，稀為尾狀，基部亞心臟形或圓形，葉緣具重複而不整齊之鋸齒，中脈及七至十三對之側脈在葉表面微凹，在葉背面則顯著，葉表面深綠色，無毛，背面淡綠色，幼嫩時被紅褐色之絨毛，成熟時則毛脫落而變光滑狀；葉柄長三至六公分，纖細，幼嫩時被紅褐色絨毛，成熟後毛即脫落而變光滑狀。花黃綠色，小蕊花與兩性花同株，着生於下垂而被稀疏黃色絨毛之總狀花序上，花序常頂生於着葉之枝上，與葉同時開放；小蕊花具長三至五公厘之小花梗，常九至二十五花成一長四至十公分之總狀花序；萼片五枚，黃綠色，無毛，革質，卵形，長三至四公厘，花瓣五枚，淡黃色或黃白色，膜質，倒卵形，長三至四公厘，寬二公厘；小蕊八本，長約三公厘，花絲纖細，無毛，花藥黃色，橢圓形，二室，花盤生於小蕊之內，無毛，微裂，子房缺如或不發育；兩性花具長一公分至一公分半之小花梗，常係十五至三十花，為長七至十二公分之總狀花序；萼片及花瓣與在小蕊花中者相同，小蕊具短花絲，子房側扁，被紅色褐之絨毛，花柱無毛，柱頭細而反捲。果為褐綠色或褐黃色之翅果，生於下垂之總狀果序上，小堅果扁而無毛，長六至八公厘，寬五公厘；翅連同小堅果長二公分半至二公分八公厘，寬八公厘，常伸張為鈍角或近平面；果梗長一公分至一公分半，纖細，無毛。

此種產於峨眉山之大峨寺，清音閣，黑龍江，牛心寺，新開寺，息心所，九老洞，遇仙寺及華嚴頂等處之森林中或路旁。三四月開花，八月果可成熟。

此種分佈於河北，山西，陝西，甘肅，江蘇，浙江， 安徽，江西，湖北，四川，西康，湖南，貴州，雲南，廣東及廣西等省。

此種廣遍佈於中國各省，峨眉山自海拔五百公尺至二千公尺之地，均甚普通。其葉背面脈上所具絨毛之變異頗大，但在嫩時常濃密，成熟時則多變為光滑；異於別種之最要特徵，為其葉緣具鈍形齒狀之鋸齒。至於相近諸種之鋸齒，均較尖銳也。

圖解：1.果枝（原大）；2.花枝（原大）；3.小蕊花（放大十倍）；4.兩性花（放大十倍）。

尖葉大衛槭

此變種產於峨眉山之遇仙寺，九老洞，鑽天坡等處，海拔二千公尺左右之叢林中。

此變種不同於原種者，以其卵狀長圓形之葉，葉緣具密接尖銳鋸齒，先端成尾狀漸尖形，且葉背面之脈上，被宿存之黃色絨毛。

此變種之分佈限於四川西南部與西康之東部。

圖解：5.葉（原大）。



138. *Acer Davidi Franch*

Plate 139.

ACER LAXIFLORUM Pax.

Aceraceae.

Acer laxiflorum Pax in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 36, fig. 7. c,d.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 63 (Chin. Maples).— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.— Rehder in Sargent, Trees & Shrubs, I (1905), 180; II (1907), 28; in Sargent, Pl. Wilson. I (1911), 93, in part, syn. *Acer Pavolinii*, excl.; III (1917), 428, excl.; Manual Cult. Trees & Shrubs (1927), 573; in Journ. Arn. Arb. XIV (1933), 214, fig. 2.— Schneider, Handb. Laubh. II (1907), 215, figs. 143 i & 141 h.— Leveille, Cat. Illustr. Pl. Seutcheouen. (1918), 179, mss.— Pax & Hoffmann in Fedde. Repert. beih. XII (1922), 435 (Bot. Reis. Hochg. Chinas & Osttibets).— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China), in part, syn. *Acer Forrestii*. excl.— Notes Roy. Bot. Gard. Edinb., XIV (1924), 353, excl.— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 176, in part, specimens cited Chun's 4430 & 4439 from Hupeh, Forrest's 5602 from Yunnan excl.; VIII (1933), 178; XI (1939), 191.

Acer laxiflorum. var. *genuinum* Pax in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 36.

Small tree, usually 6 to 10 metres high, rarely up to 15 metres high; branchlets slender, glabrous, those of the present year greenish purple, those more than one year old yellowish or darkish brown. Winter-buds axillary, ellipsoid, brown, glabrous; accrescent scales oblong-obovate, white-pubescent on the margin. Leaves opposite, deciduous, chartaceous, triangular—ovate, 7-12 cm. long, 5-8 cm. broad, doubly serrulate with appressed sharp teeth on the margin, cordate or subcordate at base, 3-lobed rarely with 2 additional obsolete basal lobes; middle lobe slender, caudate-acuminate; lateral lobes small, acute; upper surface deep green, glabrous; lower surface yellowish-green or pale green, rufous-pubescent on the veins while young, less pubescent when matured, midrib and 9-11 pairs of lateral nerves just showing above, prominent below; petioles 4-7 cm. long, slender, slightly rufous-pubescent while young, becoming glabrescent afterwards. Flowers greenish-purple, andro-dioecious, loosely in glabrous, pendulous racemes, 4 cm. long, with peduncles 2 cm. in length, terminal on leafy branchlets, appearing after developing of leaves; sepals 5, green or purplish, ovate, 4 mm. long, 2 mm. broad, glabrous; petals 5, obovate, 4 mm. long, 2 mm. broad; disk glabrous, slightly lobed, intrastaminal; stamens 8, glabrous, about 3 mm. long, included in the corolla, usually shorter in perfect flower, anthers yellow, 2-celled; ovary superior, glabrous, style slender, glabrous. Fruits, samaras, purple while young, greenish-yellow or brownish-yellow when matured: nutlets flat, 5-8 mm. in diameter; nutlets including wings 2.5-2.7 cm. long, 8-10 mm. broad, spreading at obtuse angles or nearly horizontally; pedicels 3-5 mm. long, slender, glabrous.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., *T. H. Tu*, No. *129*, in 1935; same locality, *S. S. Chien*, No, *6084*, July, 12, 1937; same locality, small tree 6 metres high, bark blackish-brown, leaves oblong-ovate, caudate, its lower surface glaucous, petioles reddish, up to 6 cm. long, *C. L. Sun*, No. *483*, June 13, 1939; without precise locality, *C. W. Yao*, Nos. *2351*, *2747*, *4005*, *4216*, *4278 4310*, & *4423*, in 1939.

SIKANG: Tien-chuan-hsien, *F. C. Tai* & *C. M. Teng*, Nos. *4337*, *5001* & *5218*, July to September 1939.

Distribution: Szechuan and Sikang

This species was discovered by Dr. Faber at Mount Omei and by Mr. Pratt. at Kangtin-hsien in eastern Sikang. so far it has been found only in Szechuan and eastern Sikang. On Mount Omei we have found it not uncommonly about half way up the mountain. It is easily recognized by its 3-lobed leaves which are sharply serrulate on the margin, and have a rufous-pubescence on the lower surfaces and caudate acuminate middle lobes..W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 6 times); 4, a perfect flower (enlarged 5 times); 5, the lower surface of leaf showing the pubescence (enlarged 2 times).

圖版一百三十九

疎花槭

槭樹科

小喬木常高六至十公尺，稀達十五公尺；小枝細而無毛，當年生枝綠紫色，多年生枝淡黃色或暗褐色。冬芽腋生，橢圓形，褐色而無毛；開花後始長大之鱗片長圓倒卵形，邊緣具白色纖毛。葉對生，冬季凋落，紙質，三角狀卵形，長七至十二公分，寬五至八公分，邊緣爲雙鋸齒狀，具密接而尖銳之鋸齒，基部心臟形或亞心臟形，三裂，基部稀具二不顯明之裂片；中央裂片細長，尾狀漸尖；二側裂片更小，銳尖；表面深綠色，無毛；背面黃綠色或淡綠色，幼嫩時葉脈上被紅褐色之絨毛，成熟時則稀少，中脈及九至十一對側脈在葉表面刚顯露，在葉背面則突出；葉柄長四至七公分，幼嫩時微被紅褐色絨毛，長成後卽脫落。花綠紫色，大小蕊花與兩性花異株，疏生於長四公分下垂而無毛之總狀花序上，具長二公分之花梗；頂生於着葉之枝上，發葉後始開放；萼片五枚，綠色或淡紫色，卵形，長四公厘，寬二公厘，無毛；花瓣五枚，倒卵形，長四公厘，寬二公厘；花盤無毛；微裂，位於小蕊之內，小蕊八本，無毛，長約三公厘，包藏於花瓣之內，在兩性花中則較短，花藥黃色，二室；子房上位，無毛，花柱細而無毛。果爲翅果，幼嫩時紫色，成熟時爲綠黃色或褐黃色；小堅果扁平，直徑五至八公厘，小堅果連翅長二公半至二公七公厘，寬八至十公厘，張開成鈍角，或幾成平面；果梗長三至五公厘，細而無毛。

此種產於峨眉山之九老洞，海拔一千八百公尺之森林中。五月開花，九月果可成熟。

此種分佈於四川及西康兩省。

此種係費伯氏發見於峨眉山及巴特氏發現於西康東部之康定縣。且其產地僅限於四川及西康東部。在峨眉山亦僅山之中部產之。其葉三裂，葉緣有銳齒，葉背面被紅褐色絨毛及其中央裂片具尾狀先端，故易辨別。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.兩性花（放大五倍）；6.葉之背面示其毛（放大二倍）。



139. *Acer laxiflora* Pax

Plate 140.

ACER MAXIMOWICZII Pax.

Aceraceae.

Acer Maximowiczii Pax in Hooker Icon. Pl. XIX (October 1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (189[illegible]), 27[illegible]: ex Diels in Engler, Bot. Jahrb. XXIX (1[illegible]0), 4[illegible] (Fl. Centralchina); in Engler, Pflanzenreich Heft 8 (IV. 16[illegible]), (1[illegible]2), 70; in Engler, Bot. Jahrb. XXXVI, beibl. LXXXII (1905), 74.— Graf von Schwerin in Gartenfl. XLII (189[illegible]), 465.— Bretschneider, Hist. Europ Bot. Discov. China, (1898), 781.— Henry in Gard. Chron. ser. 3. XXXIII (1903), 100 (Chin. Maples).— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.—Schneider, Illustr. Handb. Laubh. II (1907), 23[illegible], figs. 164 k & 165 e-f.— Matsumura in Icon. Pl. Koishikawa. I (1911), 1[illegible] t. 10.— Rehder in Sargent, Pl. Wilson. I (1911), 94; in Journ. Arn. Arb. VII (1926), [illegible]; X (1928), 9[illegible]; XIV (1933), 217, fig. 6; Manual Cult. Trees & Shrubs, (1927), 574.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 180, in part, specimens cited Tso's 20570 from Kwangtung excl.; VIII (1932), 178; XI (1939), 204 (Monogr. Chin. Aceraceae).— Handel-Mazzetti, Symb. Sin. VII (1[illegible]), 640, excl.

Acer urophyllum Maximowicz in Act. Hort. Petrop. XI (November 1889), 106.

Small tree, usually 5 metres high, rarely up to 1[illegible] metres high; bark dark brown, smooth; branchlets slender, glabrous, those of the current year green or purplish-green, those of more than one year old dark brown or brownish-grey. Winter-buds axillary, glabrous, oblong-ellipsoid; scales imbricate, whitish ciliate on the margin. Leaves opposite, deciduous, chartaceous, ovate or triangular-ovate in outline, 8-11 cm. long, 6-9 cm. broad, doubly serrulate and lobulate on the margin, with appressed apiculate teeth, subcordate or cordate rarely truncate at base, distinctly 5-lobed; middle lobe triangular-ovate, caudate-acuminate; lateral lobes ovate, acuminate or acute; basal lobes small, ovate, acute; upper surface deep green, glabrous; lower surface pale green or yellowish-green, rufous-pubescent on the veins, midrib and 9-12 pairs of primary nerves just showing above, distinctly below; petioles 5-7 rarely to 10 cm, long, purplish-green, slender, glabrous. Flowers yellowish-green, dioecious, in pendulous racemes 4-5 cm. long, on glabrous peduncles 1-1.5 cm. long, terminal on leafy branchlets, appearing after the leaves; in staminate flowers, sepals 5, ovate-oblong, obtuse, 3 mm. long, 1 mm. broad, petals 5, obovate, as long as the sepals, stamens 8, slender, slightly shorter than petals, disk intrastaminal, slightly lobed, ovary absent or rudimentary, pedicels 3-4 mm. long, slender, glabrous; in pistillate flowers, sepals 5, ovate-oblong, 3 mm. long, petals 5, obovate, slightly longer than the sepals, stamens 8, very short, disk glabrous, intrastaminal; ovary superior purple, glabrous, style short, stigmas recurved, pedicels 5 mm. long, slender. Fruits, samaras, purple while young, brownish-yellow when matured; nutlets flat, 6 mm. in diameter; wings with nutlets 2.3-2.5 cm. long, 8 mm. broad, spreading at obtuse angles; pedicels 8-10 mm. long, slender.

MOUNT OMEI: Ta-cheng-ssu, alt. 2300 m., *T. H. Tu*, No. *657*, in 1935; same locality, in thickets, shrub 3 metres high, bark green, flowers green, *C. L. Sun*, No. *227*, May 19, 1939; Lei-tung-ping, alt. 2590 m., small tree 2 metres high, *W. P. Fang*, No. *18805*, May 16, 1942; same locality, small tree 6 metres high, branchlets dark green, leaves 5-lobed and irregularly serrulate on the margin, pubescent on the veins of the lower surface, flowers light green, in racemes, *W. C. Cheng*, No. *10336*, May 13, 1940; without precise locality, *C. W. Yao*, No. *4719*, in 1939.

SZECHUAN: northeastern corner of Szechuan, without precise locality, *K. L. Chu*, *1290*, in 1935.

Distribution: Shensi, Kansu, Hupeh, Szechuan, Hunan.

This species was discovered by Dr. A. Henry at Fang-hsien of western Hupeh. On Mount Omei it grows on the upper slopes, from 2300 to 2600 metres above sea level, where other species of Acer are very rare. It is characterized by its 5-lobed leaves, the middle lobe caudate-acuminate, the lateral as well as the basal lobes usually acute..W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, a pistillate flower (enlarged 5 times).

圖版一百四十

馬氏槭

槭樹科

小喬木常高五公尺，稀達十二公尺；樹皮暗褐色，平滑：小枝細而無毛，當年生枝綠色或紫綠色，多年生枝暗褐色或褐灰色。冬芽腋生，無毛，長圓橢圓形；鱗片覆瓦狀排列，邊緣具淡白色纖毛。葉對生，冬季凋落，紙質，卵形或三角狀卵形，長八至十一公分，寬六至九公分，葉緣裂爲雙鋸齒或小裂片狀，具密接而短銳之鋸齒，基部爲亞心臟形或心臟形，稀爲楔形，具顯明之五裂片；中央裂片三角狀卵形，具尖尾形之先端，二側裂片卵形，漸尖或銳尖；基部二裂片較小，卵形，銳尖；表面深綠色，無毛；背面淡綠色或黃綠色，脈上有紅褐色絨毛，中脈及九至十二對側脈在葉表面剛露出，在葉背則顯明；葉柄長五至七分分，稀達十公分，紫綠色，細而無毛。花黃綠色，大小蕊花異株，着生於長四至五分分無毛而下垂之總狀花序上，具長一至一公分半而無毛之大花梗，頂生於着葉之枝上，發葉後花始開放；小蕊花具萼片五枚，卵狀長圓形且其先端鈍形，長三公厘，寬一公厘，花瓣五枚，倒卵形，與萼片等長，小蕊八本，纖細，微短於花瓣；花盤位於小蕊之內，微裂，子房缺如或不發育，小花梗長三至四公厘，細而無毛；大蕊花具萼片五枚，卵狀長圓形，長三公厘，花瓣五枚，倒卵形，微長於萼片，小蕊八本，極短；花盤無毛，位於小蕊之內；子房上位，紫色，無毛，花柱短，柱頭反捲，小花梗長五公厘，纖細。果爲翅果，幼嫩時爲紫色，成熟時爲褐黃色；小堅果扁平，直徑六公厘；翅連小堅果長二十三至二十五公厘，寬八公厘，張開成鈍角：果梗長五至十公厘。

此種產於峨眉山之大乘寺及雷洞坪，海拔二千三百至二千六百公尺之叢林中。五月開花，九月果可成熟。

此種分佈於陝西，甘肅，湖北，湖南及四川等省。

此種爲享利氏先首發見於鄂西之房縣。在峨眉山則生於海拔二千三百至二千六百公尺，他種槭樹不易生長之高山地域，特徵爲其五裂之葉，中央裂片爲尖尾狀，二側裂片及基部二裂片皆爲銳尖形。

圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.大蕊花（放大五倍）。

Plate 140.

ACER MAXIMOWICZII Pax.

Aceraceae.

Acer Maximowiczii Pax in Hooker Icon. Pl. XIX (October 1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 272; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 450 (Fl. Centralchina); in Engler, Pflanzenreich Heft 8 (IV. 163), (1902), 70; in Engler, Bot. Jahrb. XXXVI, beibl. LXXXII (1905), 74.— Graf von Schwerin in Gartenfl. XLII (1893), 455.— Bretschneider, Hist. Europ Bot. Discov. China, (1898), 781.— Henry in Gard. Chron. ser. 3, XXXIII (1903), 100 (Chin. Maples).— Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.—Schneider, Illustr. Handb. Laubh. II (1907), 239, figs. 164 k & 165 e-f.— Matsumura in Icon. Pl. Koishikawa. I (1911), 19 t. 10.— Rehder in Sargent, Pl. Willson. I (1911), 94; in Journ. Arn. Arb. VII (1926), 223; IX (1928), 99; XIV (1933), 317, fig. 6; Manual Cult. Trees & Shrubs, (1927), 574.— Chung in Mem. Sci. Soc. China, I (1924), 149 (Cat. Trees & Shrubs China).— Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 160, in part, specimens cited Tso's 20670 from Kwangtung excl.; VIII (1932), 178; XI (1939), 204 (Monogr. Chin. Aceraceae).— Handel-Mazzetti, Symb. Sin. VII (1933), 640, excl.

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Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 5 times); 4, a pistillate flower (enlarged 5 times).

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此種產於峨眉山之大乘寺及雷洞坪，海拔二千三百至二千六百公尺之叢林中。五月開花，九月果可成熟。

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圖解：1.花枝（原大）；2.果枝（原大）；3.小蕊花（放大五倍）；4.大蕊花（放大五倍）。



140. *Acer Maximowiczii* Pax



Plate 141.

ACER FRANCHETI Pax.

Aceraceae.

Acer Francheti Pax in Hooker Icon. Pl. XIX (1889), under t. 1897; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 272; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 450 (Fl. Centralchina); in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 71.- Graf von Schwerin in Gartenfl. XLII (1893), 325.- Bretschneider, Hist. Europ. Bot. Discov. China (1898), 781.- Henry in Gard. Chron. ser 3, XXXIII (1903), 100 (Chin. Maples).- Veitch in Journ. Roy. Hort. Soc. XXIX. pt. 3 (1904), 353. 360, fig. 88.- Hemsley in Journ. Linn. Soc. Bot. XXXVI (1905), 452.- Rehder in Sargent, Trees & Shrubs, I (1905), 175, t. 87; in Sargent, Pl. Wilson. I (1911), 97; in Journ. Arn. Arb. VII (1927), 224; Manual Cult. Tress & Shrubs (1927), 575.- Schneider, Illustr. Handb. Laubh. II (1907), 240, figs. 166 c-e & 167 d.- Leveille, Cat. Illustr. Fl. Seutcheouen, (1918), 178, mss.- Hers in Journ. N. China Branch. Roy. As. Soc. LIII (1922), 106; Liste Ess. Lign. Honan Sept. (1922), 1.- Chung in Mem. Sci. Soc. China, I (1924), 140 (Cat. Trees & Shrubs China).- Notes Roy. Bot. Gard, Edinb., XIV (1924). 258 & 367; XVII (1929), 26 (1930), 196 & 201.- Handel-Mazzetti, in Anz. Akad. Wiss.-Wien. Math.-Nat. LXI (1924), 85; (Pl. Nov. Sin. Forrests. 25, p. 5); Symb. Sin. VII (1933), 643.- Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 142.- Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932). 186; VIII (1932), 179; XI (1939), 225 (Monogr. Chin. Aceraceae).

Acer villosum Forbes & Hemsley (non Wallich), in Journ. Linn. Soc. Bot. XXIII (1886), 142 (Ind. Fl. Sin-).

Acer Schoenermarkiae Pax in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 71, fig. 1[illegible].

Acer Schoenermarkiae Pax, var. *oxycolpum* Handel-Mazzetti in Sitz. Akad. Wiss. Wien. Math. Nat. LVII (1920), 269 (Pl. Nov. Sin. Forrests. 7, p. 4); LXI (1924), 85.

Tree, usually 10 to 15 metres high, bark dark brown; branchlets stout, those of the current year brownish-green or brownish-yellow, pubescent, those more than one year old reddish-brown or dark brown, glabrous. Winter-buds dark brown; scales numerous, imbricate, ciliate on the margin, accrescent scales lanceolate or oblanceolate, densely pilose outside. Leaves opposite, deciduous, chartaceous, 9-12 rarely 20 cm. long, 8-12 rarely 20 cm. broad, cordate or subcordate rarely rounded at base, usually 3-lobed, occasionally with 2 basal lobes, rarely lateral lobes obsolete, irregularly and remotely toothed; middle lobe ovate, acute; lateral lobes acute, forwardly directed; upper surface deep green; lower surface pale green, reticulate; pubescent on both surfaces, densely so on the nerves while young, then glabrescent, sometimes with tufts of hairs at the axils of nerves or rarely slightly pubescent below; petioles 8-10 cm. long, pubescent while young, glabrescent when matured. Flowers yellowish-green, dioecious, on pendulous, pubescent slender racemes or paniculate racemes from leafless lateral buds of 2 or 3 years old branchlets, appearing usually before or rarely with leaves; sepals 5, ovate-oblong, about 4.5 mm. long, 2 mm. broad, slightly pubescent outside; petals 5, obovate, as long as the sepals; disk glabrous, extrastaminal; stamens usually 8, rarely 10, about 6 mm. long, exserted, absent or rudimentary in pistillate flower, filaments glabrous, anthers yellow; ovary densely pubescent, rudimentary in staminate flower; pedicels 1-2 cm. long, pubescent. Fruits, stout samaras, 5 to 8 on pendulous fruiting inflorescence, yellowish green while young, changing to deep yellow when matured; nutlets 8-10 mm. in diameter, convex, globose, strongly reticulate, pilose; nutlets including wings 4.5-5 cm. long, 1.8-2 cm. broad, strongly veined, spreading at right angles or erectly; pedicels 2-3 cm. long, stout, more or less pubescent.

MOUNT OMEI: Hsi-hsin-so, alt. 1400 m., in forests, tree 15 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. *1496*, April 11, 1940; Chang-lao-ping, alt. 1600 m., small tree 5 meters high, staminate flowers yellowish-green, *W. P. Fang*, No. *16441*, May 6, 1941; Chiu-lao-tung, alt. 1800 m., in woods, small tree 7 metres high, bark brown, flowers yellowish-green, *C. L. Sun*, No. *1586*, April 18, 1940; same locality, in woods, tree 8 metres high, bark dark green, flowers appearing while the developing of leaves, *C. L. Sun*, No. *1821*, May 1, 1940; Hsi-hsiang-chih, alt. 2100 m., small tree 4 metres high, staminate flowers greenish-yellow, *W. P. Fang*, No. *18767*, May 16, 1942; Ta-cheng-ssu, alt. 2300 m., *S. S. Chien*, No. *6088*, July 12, 1937; same locality, in forests, small tree 5 metres high, flowers green, rare, *W. P. Fang*, *14740*, May 20, 1940; same locality, in forests, small

tree 7 metres high, flowers yellowish green, occasionally, *W. P. Fang*, No. *16567*, May 10, 1941.

Distribution: Shensi, Honan, Hupeh, Hunan, Szechuan, Sikang, Yunnan.

This species is confined to western China. We have found it not uncommonly in forests or in woods about half way up Mount Omei. The staminate inflorescence has more flowers than has the pistillate..W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a pistillate flowering inflorescence (natural size); 3, a staminate flowering inflorescence (natural size); 4, a pistillate flower (enlarged 5 times); 5, a staminate flower (enlarged 5 times).

圖版一百四十一

樊氏槭

槭樹科

喬木常高十至十五公尺；樹皮暗褐色；小枝粗壯，當年生枝綠褐色或黃褐色，被絨毛，多年生枝紅褐色或暗褐色，無毛。冬芽暗褐色；鱗片多數，覆瓦狀排列，邊緣具纖毛；開花後長大之鱗片披針形或倒披針形，外被濃密之粗毛。葉對生，冬季凋落，紙質，長九至十二公分，稀達二十公分，寬八至十二公分，稀達二十公分，基部心臟形或亞心臟形，稀為圓形，常三裂，基部稀再具二裂片抑或二側裂片亦不發育，具不規則而稀疏之鋸齒；中央裂片卵形，銳尖；二側裂片銳尖，且向前直伸；表面深綠色；背面淡綠色，網脈顯著；兩面被絨毛，幼嫩時在脈上之毛尤多，旋卽脫落，在葉背面之脈腋間偶具叢生之毛或全背面均微被毛；葉柄長八至十公分，幼嫩時被毛，成熟時則毛脫落。花黃綠色，大小蕊花異株，着生於下垂具毛而纖細之總狀花序上抑或圓錐狀總狀花序上，花序由二三年生無葉幼枝之側芽發出，開花在發葉之前，稀與發葉同時開放；萼片五枚，卵狀長圓形，長約四公分半，寬二公厘，外面微被絨毛；花瓣五枚，倒卵形，與萼片等長；花盤無毛，位於小蕊之外圍；小蕊常為八本，稀為十本，長約六公厘；伸出花外，在大蕊花中則缺如或不發育，花絲無毛，花藥黃色；子房被濃密之絨毛，在小蕊花中不發育；小花梗長一至二公分，被毛。果實為粗壯翅果，五至八枚生於下垂之果序上，幼嫩時為黃綠色，成熟時變為深黃色；小堅果之直徑為八至十公厘，凸出成圓球形，有極顯著之網狀脈紋，被粗毛；小堅果連翅長四公分半至五公分，寬一公分八公厘至二公分，脈紋顯著，張開成直角或直立；果梗長二至三公分，粗壯，微被絨毛。

此種產於峨眉山之息心所，長老坪，九老洞，洗象池及大乘寺等處，海拔一千四百公尺至二千三百公尺之森林中。四月開花，九月果可成熟。

此種分佈於陝西，河南，湖北，湖南，四川，西康及雲南等省。

此種惟華西有之，在峨眉山中部甚普通，其小蕊花序所有之花較多於大蕊花序之花。

圖解：1. 果枝（原大）；2. 大蕊花序（原大）；3. 小蕊花序（原大）；4. 大蕊花（放大五倍）；5. 小蕊花（放大五倍）。



141. *Acer Francheti* Pax

Plate 142.

ACER STACHYOPHYLLUM Hiern.

Aceraceae.

Acer stachyophyllum W. P. Hiern in Hooker f. Fl. Brit. Ind. I (1875). 691.- Wesmael in Bull. Soc. Roy. Bot. Belg. XXIX (1890), 45.- Graf von Schwerin in Gartenfl. XLII (1893), 3 .- Pax in Engler, Bot. Jahrb. VII (1886), 217; in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), in Engler, Pflanzenreich, Heft 8 (IV. 163), (1902), 34, fig. 7, A & B.- Henry in Gard. Chron. ser. 3 XXXIII (1903), 62 (Chin. Maples), excl.- Schneider, Illustr. Handb. Laubh. II (1907), 2 , figs. 16 & 170 L.- Smith & Cave, Record. Bot. Surv. IV (1911), 184.- Dunn in Journ. Linn. Soc. Bot. XXXIX (1911), 414.- Leveille, Fl. Kouy-tcheou, (1915), 353, excl.- Marquand in journ. Linn. Soc. Bot. XLVIII (1929), 169.- Fang in Contrib. Biol. Liol. Lab. Sci. Soc. China, Bot. Ber. XI (1939), 211.

Acer tetramerum Rehder (non Pax) in Sargent, Trees & Shrubs, I (1905), 171, t. , in part, specimen cited Henry's 8799 from Hupeh & fig. 7 incl.; II (1907), 26.

Acer tetramerum Pax var. *elobulatum* Rehder in Sargent, Pl. Wilson. I (1911) 95.

Acer tetramerum Pax var. *elobulatum* Rehder f. *longeracemosum* Rehder in Sargent, Pl. Wilson. I (1911), 96.

Acer tetramerum Pax var. *betulifolium* Rehder in Sargent, Pl. Wilson. I (1911) 96.

Acer tetramerum Pax var. in Notes Roy. Bot. Gard. Edinb., XIV (1924), 210, 256 276 & 356.

Acer tetramerum Pax var. *elobulatum* Rehder form *mapienense* Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 182.

Acer tetramerum Pax var. *elobulatum* Rehder form *viridicarpum* Fang in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 184.

Small tree, usually 5 to 10 metres high, rarely up to 15 metres high, bark dark brown or greyish-brown, smooth; branchlets slender, glabrous, those of the current year purplish-green or greyish-green, those of more than one year old greyish green or brownish-green, without lenticels. Winter-buds small, ellipsoid; outer pair of scales reddish-purple, glabrous; inner pair of scales accrescent, obovate-oblong, yellowish, glabrous except slightly purplish-pubescent outside near the apex. Leaves deciduous, chartaceous, ovate, 8-11 cm. long, 5-6 cm. broad, usually rounded or occasionally slightly subcordate at the base, caudate-acuminate on the apex, coarsely serrate with appressed, obtuse or acutish teeth; upper surface deep green, glabrous; lower surface pale green; 3-nerved at base, rarely basal nerves rudimentary, lateral nerves usually 4-5 pairs, densely whitish velutinous-pubescent especially on the nerves while young, occasionally less pubescent when matured; petioles 3-8 cm. long, slightly pubescent near the apex. Flowers dioecious, in racemes; staminate flowers yellowish-green, on slender pedicels 8-15 mm. long, 5 to 8 in glabrous racemes about 1-1.5 cm. long, on very short peduncles, from leafless lateral buds, appearing with the leaves, sepals 4, obovate-oblong, 3-4 mm. long, 2 mm. broad; petals 4, much shorter than sepals, ovate, usually about 1 mm. broad, stamens 4-6 mm. long, glabrous, anthers yellow, ovate, disk glabrous, deeply lobed, extrastaminal, ovary absent; in pistillate flowers sepals 4, obovate-oblong, 3-4 mm. long, 2 mm. broad, petals 4, much shorter than sepals, ovate, stamens absent, disk cup-shaped, ovary superior, compressed, glabrous, style slender, divergent and recurved, stigmas minute. Fruits, samaras, purple while young, yellowish brown when matured, in racemous fruiting inflorescence, about 12-15 cm. long, on peduncles 3-4 cm. long, terminal on leafy branchlets; nutlets oblong-ellipsoid, convex, strongly rugose, 1.3 cm. long, 1 cm. broad; wings included nutlets 4-5 cm. long, 1.5 cm. rarely to 2 cm. broad, spreading usually erectly or rarely at obtuse angles; pedicels 2-2.5 cm. long, slender, glabrous.

MOUNT OMEI: Yu-hsien-ssu, alt. 1771 m., *W. P. Fang*, Nos. *2656 & 2751*, August 1928; same locality, *W. P. Fang*, No. *6640*, July 18, 1930; same locality, *T. H. Tu*, No. *215*, in 1935; same locality, tree 3 metres high, young leaves whitish-pubescent below, pistillate flowers green, *C. L. Sun*, No. *1846*, May 2, 1940; same locality, small tree 5 metres high, leaves with axillary tufts of hairs below, *W. C. Cheng*, No. *10308*, May 13, 1940; Lien-hua-shih, alt. 1920 m., in woods, small tree 4 metres high, bark grey, young leaves densely pubescent below, flowers green, *C. L. Sun*, No. *1873*, May 5, 1940.

SIKANG: Tien-chuan-hsien, Mem-kan-shan, in woods, small tree 7-8 metres high, leaves light green below, samaras purple, occasionally, *F. C. Tai & C. M. Teng*, No. *5236*, September 24, 1939.

Distribution: Hupeh, Szechuan, Sikang, Yunnan, Tibet; Sikkim-Himalayas.

This species is distributed from the Sikkim-Himalayas eastward through Tibet, Yunnan, Sikang, and Szechuan to the border of Western Hupeh. On Mount Omei it grows in woods or in forests of shaded ravines about half way up the mountain. It is easily recognized by the undivided leaves which are coarsely serrate on the margin and with whitish-green velutinous-pubescence on the lower surface..W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a portion of leaf to show the hairs on the lower surface of the leaf (enlarged 2 times); 3, a staminate flowering inflorescence (natural size); 4, a staminate flower (enlarged 5 times); 5, a pistillaie flowering inflorescence (natural size); 6, a pistillate flower (enlarged 5 times).

Dipteronia sinensis Oliver in Hooker Icon. Pl. XIX (1889), t. 1898.- Pax in Engler & Prantl, Pflanzenfamilien, III, pt. 5 (1896), 269, t. 147; ex Diels in Engler, Bot. Jahrb. XXIX (1900), 4 (Fl. Centralchina); XXXV, beibl. LXXXII (1905), 7 ; in Engler, Pflanzenreich, Heft 8 (IV. 163) (1902), 6, fig. 2.- Bretschneider. Hist. Europ. Bot. Discov. China, (1898), 781.- Henry in Gard. Chron. ser. 3, XXXIII (1903), 22.- Veitch in Journ. Roy. Hort. Soc. XXVIII (1903), 60, figs. 18 & 19.- Schneider, Illustr. Handb. Laubh. II (1907), 192, figs. 124 a-f & 126 a.- Rehder in Sargent, Pl. Wilson. I (1911), 83; in Journ. Arn. Arb. VII (1926), 215; XV (1934), 4; Manual Cult. Trees & Shrubs, (1927), 558.- Chun, Chin. Econom. Trees, (1821), 280; in Hu & Chun, Icon. Pl. Sin. I (1927), 36, t. 36.- Thatcher In Gard. Chron. LXXII (1922), 138, fig. 57.- Chung in Mem. Sci. Soc. China, I (1924). 148 (Cat. Trees &

Shrubs China).- Cox in Gard. London, LXXXIX (1925), 449, fig. in p. 448.- Bean, Trees & Shrubs Hardy Brit. Isl. I (1929), 498.- Fang in Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. VII (1932), 144; XI (1939), 15 (Monogr. Chin. Aceraceae).

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Lung-men-ku, *W. C. Cheng*, No. *6313*, July 1936.

Distribution: Honan, Shensi, Hupeh, Szechuan, Sikang and Kweichow.

Although this species has been well known from the provinces of Western China, it is very rare in occurence. The recent discovery of it at southwest of Mount Omei proves how very rich is the flora of China in this region..W. P. Fang.

Fig. 7, a fruiting inflorscence (natural size); 8, a pinnate leaf (natural size).

圖版一百四十二

粉葉槭

槭樹科

小喬木高五至十公尺，稀達十五公尺；樹皮暗褐色或灰褐色，平滑，小枝細而無毛，當年生枝爲紫綠色或灰綠色，多年生枝爲灰綠色或褐綠色，無皮孔。冬芽小，橢圓形；表面一對鱗片紫紅色，無毛；裏面一對鱗片，開花後始特別長大，倒卵狀長圓形，淡黃色，除表面近先端處微被紫色絨毛外，餘皆無毛。葉冬季凋落，紙質，卵形，長八至十一公分，寬五至六公分，基部常爲圓形或稀呈亞心臟形，先端尾狀漸尖形，邊緣具粗鋸齒，鋸齒密接鈍形或銳尖形；葉表面深綠色，無毛；背面淡綠色；基部具五主脈，稀不發育，側脈常四至五對，幼嫩時被濃密淡白色而細柔之毛，葉脈上更多，成熟時毛較稀少；葉柄長三至八公分，近先端處微被毛。大小蕊花異株，成總狀花序；小蕊花黃綠色，具長八至十五公厘之小花梗，常五至八枚成一長約一公分至一公分半且無毛之總狀花序，着生於一極短之大花梗上，由無葉之側芽發出，開放與發葉同時，萼片四枚，倒卵狀長圓形，長三至四公厘，寬二公厘；花瓣四枚，較短於萼片，卵形，寬約一公厘，小蕊長四至五公厘，無毛，花藥黃色，卵形，花盤無毛，深裂，位於小蕊之外圍，無子房；大蕊花具萼片四枚，倒卵狀長圓形，長三至四公厘，寬二公厘，花瓣四枚，較短於萼片，卵形，無小蕊，花盤杯形，子房上位，扁形，無毛，花柱纖細，分枝而反捲，柱頭細小。果爲翅果，幼嫩時紫色，成熟時變爲黃褐色，着生於總狀果序上，長約十二至十五公分，具長三至四公分之果梗，頂生於着葉之枝上；小堅果長橢圓形，凸出，有極顯著之皺紋，長十三公厘，寬十公厘；翅連小堅果長四至五公分，寬一公分半稀達二公分，常直展，稀成鈍角；果梗長二公分至二公分半，細而無毛。

此種產於峨眉山之遇仙寺及蓮花石等處，海拔一千七百公尺至二千公尺之森林中。五月開花，八九月果可成熟。

此種分佈於湖北，四川，西康，雲南，西藏；喜馬拉雅山南部印度之哲孟雄等處。

此種之分佈，由哲孟雄東向經藏，滇，康，蜀諸省而至鄂西，在峨眉山則生於山中部深谷之林中，以其有不分裂之葉，葉緣有粗鋸齒，及葉背面被以白綠色而細柔之毛外觀似綠粉，故易辨別。

圖解： 1. 果枝（原大）； 2. 葉之一部，以示其葉背面之毛（放大二倍）； 3. 小蕊花序（原大）； 4. 小蕊花（放大五倍）； 5. 大蕊花序（原大）； 6. 大蕊花（放大五倍）。

金錢槭

此種產於峨眉山西南之峨邊縣。

此種前已熟知其分佈於河南，陝西，湖北，四川，西康及貴州等省。近於峨眉山之西南發現，適足以證明該地植物之豐富也。

圖解： 7. 果序（原大）； 8. 羽狀複葉（原大）。



142. Acer stachyophyllum Hiern. Dipteronia sinensis Oliver

Plate 143.

JUGLANS REGIA Linnaeus.

Juglandaceae.

Juglans regia Linnaeus, Spec. Pl. (1753), 997.- Loureiro, Fl. Cochin. (1790), 573.- Bunge in Mem. Div. Sav. Acad. Sci. St.-Petersb. II (1833-35?), 136 (Enum. Pl. Chin. Bor. 62).- C. De Candolle in De Candolle, Prodr. XVI, pt. 2 (1864), 135.- Kurz in Journ. Bot. XI (1873), 193.- Hance in Journ. Bot. XIII (1875), 133.- Brandis, Forest Fl. Brit. Ind. (1874), 497; Ind. Trees (1906), 619.- Franchet in Mem. Soc. Sci. Nat. Cherbourg, XXIV (1884), 254.- Hooker, f. Fl. Brit. Ind. V (1888), 595.- Skan in Journ. Linn. Soc. Bot. XXVI (1899), 493.- Gilg in Engler, Bot, Jahrb. XXXIV, beibl. LXXV (1904), 23.- Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 184.- Loesener in Bot. Centralbl, Beibl. XXXVII. abt. II (1919), 107.- Hers in Journ. N. China Branch R. As. Soc. LIII (1922), 111.- Rehder in Journ. Arn. Arb. IV (1923), 147.- Bean, Trees and Shrubs Hard. Brit. Isl. I (1914), 666.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 53.

Deciduous tree, usually 15, rarely up to 30, metres high; bark grey, smooth; branchlets stout, glabrous, green or deep green, with conspicuous leaf-scars and lenticels, pith lamellate. Winter-buds subglobose, several pairs of ovate scales yellowish-pubescent on both surfaces while young. Leaves alternate, odd-pinnate, 30-50 cm. long, consisting of 5-9 leaflets, subsessile, elliptical or oblong-ovate, 6-15 cm. long, 3-10 cm. broad, acute or acuminate on the apex, obliquely rounded at the base, entire on the margin, deep green and glabrous above, pale green below and with tufts of hairs at the axils of nerves while young, glabrous when matured, midrib conspicuous above, prominent below, primary veins 12-15 pairs just showing above, conspicuous below, leaf-rachis 18-25 cm. long, terete, at first puberulous, then glabrous. Flowers monoecious; staminate flowers numerous in pendulous catkins 8-12 cm. long, from lateral buds of branchlets, stamens 18-23, in the axils of bracts bearing 2 bractlets, perianth 4-lobed, anthers apiculate, sessile, 2-celled; pistillate flowers usually two on a stalk terminal on a branchlet, surrounded by a pubescent 3-lobed involucre consisting of a bract and 2 bractlets, perianth 4-lobed, ovary inferior, style divided into 2 plumose stigmas. Fruits green, glabrous, subglobose, drupe-like, 4-5 cm. in diameter; nuts usually ovoid or ellipsoid, pointed, slightly wrinkled, thick-walled.

MOUNT OMEI: Fu-hu-ssu, roadside, cultivated, tree 10 metres high, *S. S. Chien*, No. *5477*, May 4, 1936; Lung-men-tung, alt. 546 m., at roadside, tree 15 metres high, staminate catkins greenish, *W. P. Fang*, No. *14181*, April 20, 1940; same locality, tree 20 metres high, staminate catkins greenish, *C. L. Chow*, Nos. *5083* & *5088*, March 31, 1942; Pao-chang-fung, alt. 1400 m., tree 8 metres high, flowers monoecious, staminate flowers greenish, in pendulous catkins, young fruits ovoid, *W. P. Fang*, No. *18009*, April 16, 1942; without precise locality, *H. C. Chow*, No. *9981*, April 1939; southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, No. *5953*, June 1936.

SZECHUAN: Nanchuan-hsien, *K. L. Chu*, No. *1165*, in 1935; same locality, *Y. C. Yang*, No. *5035*, April 1939; Kuan-hsien, cultivated near a house, tree about 12 metres high, staminate flowers purplish-yellow, in catkins, *W. P. Fang*, No. *12130*, April 8, 1938; Chengtu, cultivated in the University, small tree 8 metres high, bark grey, smooth, pistillate flowers green, *W. P. Fang*, No. *12244*, April 21, 1938; Chengtu, cultivated in the University, small tree 8 metres high, staminate flowers greenish, in catkins, *W. P. Fang*, No. *15367*, April 22, 1939.

SIKANG: without precise locality *C. P. Hwang*, No. *594*, April 7, 1930.

Distribution: Europe, Asia, China: Hopei, Shantung, Honan, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Sikang, Kweichow and Yunnan.

This is the common walnut in China. Its seeds are very rich in fats and have been commonly used as food with high-value. Its wood has been commonly used as good material for making gun-stalks and furniture. The glabrous and entire leaflets mark this species different from other species..W. P. Fang.

Fig. 1, a fruiting and leafy branch (2/3 of natural size); 2, a pistillate flowering inflorescence (natural size); 3, a leafy and flowering branch with staminate flowering inflorescence (natural size); 4, a staminate flower (enlarged 10 times); 5, a stamen (enlarged 10 times); 6, a section of fruit (natural size); 7, a portion of leaf (enlarged 2 times).

圖版一百四十三

胡桃 俗名：核桃

胡桃科

落葉喬木高十五公尺，稀達三十公尺；樹皮灰色，平滑；小枝粗壯，無毛，綠色或深綠色，具顯明之葉痕及皮孔，髓白色，片狀。冬芽亞圓球形，具數對卵形鱗片，幼嫩時鱗片之兩面皆被淡黃色絨毛。葉互生，奇數羽狀複葉，長三十至五十公分，具小葉片五至九枚，近於無柄，橢圓形或長圓卵形，長六至十五公分，寬三至十公分，先端銳尖或漸尖，基部斜圓形，全緣，表面深綠色，無毛，背面蒼綠色，幼嫩時葉脈腋間具叢生之毛，成熟時則脫落，中肋在葉表面稍顯明，在葉背面則突出，側脈十二至十五對，在葉表面顯明，在葉背面尤較顯着，葉總軸長十八至二十五公分，圓形，初被絨毛，旋即脫落。大小蕊花同株；小蕊花多數，着生於長八至十二公分而下垂之葇荑花序上，由小枝側芽發出，小蕊十八至二十二本，生於大苞片及二小苞片之腋間，花被四裂，花藥先端短尖，無柄，二室；大蕊花每二枚生於一梗上，在小枝頂端，包圍於一被毛之總苞內，總苞由一大苞片及二小苞片所組成，花被四裂。子房下位，花柱分歧成二羽狀柱頭。果爲綠色，無毛，亞圓球形，核果狀，直徑四至五公分；堅果常爲卵圓形或橢圓形，先端尖形，微有皺紋，壁厚。

此種產於峨眉山之伏虎寺，龍門洞及寶掌峯等處。海拔五百餘公尺至一千四百公尺之路旁。三四月開花，九月果可成熟。

此種分佈於河北，山東，河南，浙江，江蘇，安徽，江西，湖北，湖南，四川，西康，貴州及雲南等省。歐洲及亞洲各地均有栽培者。

此種爲中國最普通之核桃。種子極富於脂肪，常用爲極有價值之食品；木材常用以作槍托及傢俱。其葉全緣而無毛，堪爲斯種之特徵，以別於他種。

圖能： 1. 果及葉枝（縮小三分之一）； 2. 大蕊花序（原大）； 3. 葉及具小蕊花序之枝（原大）； 4. 小蕊花（放大十倍）； 5. 小蕊（放大十倍）； 6. 果之剖面（原大）； 7. 葉之一部（放大二倍）。



143. Juglans regia Linnaeus



Plate 144.

JUGLANS CATHAYENSIS Dode.

Juglandaceae.

Juglans cathayensis Dode in Bull. Soc. Dendr. France, (1909), 47, fig.; in Fedde, Repert. Spec. Nov. Reg. Veg. X (1911), 298.- Wilson in Gard. Chron. ser. 3, L (1911), 189, fig. 88, t.- Bean, Trees & Shrubs Hardy Brit. Isl. I (1914), 664.- Rehder & Wilson in Sargent, Pl. Wilson. III (1916), 186.- Handel-Mazzetti, Symb. sin. VII. Lieferung I (1929), 54.

Junglans mandshurica Skan (non Maximowicz) in Journ. Linn. Soc. Bot. XXVI (1899), 493, pro parte.- Pritzel in Engler, Bot. Jahrb. XXIX (1900), 274.

Juglans Sieboldiana Pritzel (non Maximowicz) in Engler, Bot. Jahrb. XXIX (1900), 274.

Juglans Draconis Dode in Bull. Soc. Dendr. France, (1909), 49, fig.; in Fedde, Repert. Spec. Nov. Reg. Veg. X (1911), 208.

Deciduous tree, usually 5 to 10, rarely to 20, metres high, bark grey then becoming brown or dark-brown, at first smooth, then becoming slightly fissured with age; branchlets stout, terete, with conspicuous leaf-scar and whitish lamellate pith, grey-pubescent mixed with glandular-hairs, lenticels conspicuous, ovate or linear. Winter-buds axillary, ellipsoid, scales several pairs, valvate, ovate, densely grey glandular-pubescent outside. Leaves alternate, exstipulate, oddpinnate, 30-50 cm. long, leafets 9-15, sessile or subsessile, ovate-oblong or ovate, 8-17 cm. long, 3-7 cm. broad' acuminate or acute on the apex, obliquely rounded or subcordate at the base, serrulate on the margin, upper surface deep green and sparsely pubescent, lower surface pale green and densely greyish velutinous-pubescent mixed with glandular hairs while young, less so when matured, midrib conspicuous above, prominent below, 21-25 pairs of primary veins just showing above, prominent below, leaf-stalk terete, 20-30 cm. long, densely grey glandular-pubescent. Flowers monoecious; staminate flowers in pendulous catkins 10-20 cm. in length, from axillary buds lateral on branchlets, stamens 15-16 in the axils of oblanceolate bracts bearing 2 bractlets and 2, rarely 4, perianth-lobes, anthers sessile, yellow, oblong-ellipsoid, 2-celled; pistillate flowers usually 8 to 12 in a terminal raceme about 5 cm. in length, covered by a yellow-pubescent involucre consisting of a bract and 2 bractlets, perianth 4-lobed, style divided into 2 plumose stigmas. Fruits drupe-like, pubescent mixed with glandular-hairs, ovoid, 3-4.5 cm. long, usually 6-12 in a pendulous stout fruiting stalk; nuts thick walled.

MOUNT OMEI: near Ta-o-ssu, Lo-chia-chiao, alt. 1200 m., small tree 12 metres high, bark dark brown, young leaves green, pubescent, staminate flowers green, in pendulous catkins, pistillate flowers purple, in spikes, *C. L. Sun*, No. *47*, May 3, 1939; Chu-tien, alt. 1800 m., small tree 5 metres high, bark brown, flowers green, *C. L. Sun*, No. *1544*, April 16, 1940; same locality, in thickets, small tree 6 metres high, staminate flowers green in long pendulous catkins, *W. P. Fang*, No. *16603*, May 12, 1941; without precise locality, *T. T. Yu*, No. *441*, in 1932; without precise locality, *W. C. Cheng*, No. *6678*, October 1936; without precise locality, *H. C. Chow*, No. *9871*, in 1938; without precise locality, *C. W. Yao*, No. *3641*, in 1939.

SZECHUAN: Kuan-hsien, Mt. Tsing-cheng, *C. Y. Chiao*, sine no. May 1940.

Distribution: Chekiang, Kiangsu, Hupeh, Hunan, Szechuan and Yunnan.

This species is not uncommon in the forests near Chu-tien. It is easily recognized by the glandular-pubescent leaves, branchets and fruits. The pistillate inflorescence consists usually 8 to 12 flowers and fruiting stalk consists also so many fruits that makes this species easily distinguished from other species of this genus..W. P. Fang.

Fig. 1, a leafy and flowering branch (natual size); 2, a pistillate flower (enlarged 5 times); 3 & 4, staminate flowers (enlarged 5 times); 5, a stalk of fruits (natural size); 6, a portion of leaf to show the hairs (enlarged 10 times).

圖版一百四十四

華胡桃 俗名：野核桃

胡桃科

落葉喬木高五至十公尺，稀達二十公尺，樹皮灰色，旋即變爲褐色或暗褐色，幼嫩時平滑，漸老即變爲片狀縱裂；小枝粗壯，圓形，具顯明之葉痕，及淡白色片狀之髓，被灰色絨毛及腺毛，皮孔顯著，卵形或線形。冬芽腋生，橢圓形，鱗片數對，鑷合狀排列，卵形，表面被濃密之灰色腺毛。葉互生，無托葉，奇數羽狀複葉，長三十至五十公分，小葉九至十五枚，無柄或有短柄，卵狀長圓形或卵形，長八至十七公分，寬三至七公分，先端銳尖或漸尖，基部斜圓形或亞心臟形，葉緣具細鋸齒，葉表面深綠色並被稀疏之絨毛，背面淺綠色，幼嫩時被濃密之淡灰色細柔毛並具腺毛，成熟時則毛漸少，中肋在葉表面顯明，在葉背面突出，側脈二十一至二十五對在葉表面僅顯露，在葉背面則突起，葉柄圓形，長二十至三十公分，被濃密之灰色腺毛。大小蕊花同株，小蕊花着生於長十至二十公分而下垂之葇荑花序上，由腋生於小枝之側芽發出；小蕊十五至十六本，生於一倒披針形大苞片及二小苞片之腋，花被二裂稀爲四裂。花藥黃色不具花絲，長圓狀橢圓形，二室；大蕊花常有八至十二枚生於長約五公分頂生之總狀花序上，蓋以被黃色絨毛之總苞，總苞具一大苞片及二小苞片，花被四裂，花柱分爲二羽毛狀柱頭。果實核果狀，被絨毛及腺毛，卵圓形，長三至四公分半，常六至十二枚生於一下垂而粗壯之果梗上；堅果有厚壁。

此種產於峨眉山之大峨寺，初殿及長老坪等處，海拔一千二百至一八百公尺之草坡或森林中。四五月開花，九月果可成熟。

此種分佈於浙江，江西，湖北，湖南，四川及雲南等省。

此種在初殿附近甚普遍，其小枝與葉及果均具腺毛，大蕊花序常由八至十二花組成，而果梗上亦有如是多之果實，故易與此屬中其他各種辨別。

圖解： 1. 着葉與花之枝（原大）； 2. 大蕊花（放大五倍）； 3 及 4. 小蕊花（放大五倍）；5. 果序及所具之果實（原大）； 6. 葉之一部，以示其毛（放大十倍）。



144. *Juglans cathayensis* Dode

Plate 145.

PTEROCARYA INSIGNIS Rehder et Wilson.

Juglandaceae.

Pterocarya insignis, Rehder et Wilson in Sargent, Pl. Wilson. III (1916). 183.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 56.

Pterocarya Paliurus, Franchet (non Batalin) in Journ. de Bot. XII (1898), 318, quoad descriptionem florum et specimen floribus masculis e Tchen-keou-tin.

Tree usually 15 metres, rarely up to 20 metres high, 50-70 cm. in diameter; bark grey or dark grey, slightly furrowed; branchlets stout, terete, brown or dark brown; glabrous, with conspicuous rounded or ovate lenticels; winter-buds elongate-conical, 2-3.5 cm. long, scales 3, brownish green, lanceolate or oblong-lanceolate, convolute, as long as the buds and covered the buds, yellow-scaly and sparsely pubescent on the outer surface, glabrous on the inner surface except puberulous at the middle part. Leaves odd-pinnate with 7-13 leaflets, 20-35 cm. long included the petiole, lateral leaflets opposite or subopposite, the lower ones usually smaller than the upper ones, oblong or lanceolate-oblong, 7-15 cm. long, 2.5-4 cm. broad, acuminate on the apex, obliquely rounded at the base, shortly petiolulate or subsessile, terminal leaflets ovate or ovate-oblong, 10-12 cm. long, 5-6 cm. broad, acuminate on the apex; attenuate and broadly cuneate at the base, on petiolules 1.2-2 cm. long, all the leaflets serrulate on the margin with appressed sharp teeth, upper surface deep green, glabrescent except sparsely puberulous on the veins, lower surface pale green, at first floccose-tomentose and densely covered with small, pale scales, then glabrescent except yellow-tomentose on the midrib and lateral veins, midrib slightly depressed above, elevated below, primary veins 20-25 pairs, obsolete above, prominent below, rhachis terete, yellow-tomentose; petioles 5-6 cm. long, slightly grooved or flat above, rounded below, dilated at base, yellowish-tomentose. Flowers monoecious, staminate flowers subsessile, in pendulous catkins usually to 18 cm. long, bracts ovate densely hirsute on the outer surface, stamens 15, sessile; pistillate flowers in an erect catkin up to 20 cm. long, on a peduncle 6 cm. long, with several sterile, elongated, pubescent bracts, fertile bracts subulate, perianth about 1.5 mm. long, slightly lobed, ovary inferior, styles 3-4 mm. long, hirsute and plumose at the apex. Fruit a sessile nut with persistent style and 2 orbicular-ovate wings 1.5-2 cm. long, 2-2.5 broad, in a sparsely glandular fruiting catkin up to 45 cm. in length, seeds yellow, shining

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., *T. H. Tu*, No. *150*, in 1935; same locality, *S. S. Chien*, No. *0153*, July 15, 1937; same locality, in forests, tree 9 metres high, bark grey, *C. L. Sun*, No. *468*, June 12, 1939; Hua-yen-ting, alt. 1950 m., in woods, tree 10 metres high, bark dark brown, flowers light green, *C. L. Sun*, No. *1888*, May 6, 1940; Ta-cheng-ssu, alt. 2386 m., on open slopes tree 16 metres high, 70 cm. in diameter. *W. W. Ma*, No. *2581*, June 23, 1940; same locality, tree 20 metres high, *T. C. Lee*, No. *3895*, October 14, 1940; same locality, tree 10 metres high, *W. P. Fang*, No. *17153*, July 5, 1941; southwest of Mount Omei, Opien-hsien, Yen-ching-chi, *W. C. Cheng*, No. *6458*, July 1936.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. *3398*, July 27, 1936.

Distribution: Szechuan, Sikang and Yunnan.

This distinct species is of very beautiful tree and is easily recognized by its large winter-buds which are covered by three scales, by the large leaf with 7-13 leaflets on a tomentose rhachis and by its fruit with two orbicular-ovate insignia-like wings about 2 cm. in diameter. This species was discovered by the late Dr. E. H. Wilson at the base of Wa-shan, Opien-hsien. Through our extensive explorations it has been found on Mount Omei although is very rare. Its distribution is confined to Szechuan, Western Hupeh and Northeastern Yunnan..W. P. Fang.

Fig. 1, a leafy and fruiting branch (natural size); 2, a flowering and young leafy branch (natural size); 3, a pistillate flowering inflorescence with flowers just over (natural size); 4, a pistillate flower (enlarged 10 times); 5, a staminate flower (enlarged 5 times); 6, a scale of the bud (enlarged 2 times).

圖版一百四十五

勳章楓楊

胡桃科

喬木高十五公尺，稀達二十公尺，直徑五至七公寸；樹皮灰色或暗灰色，微現溝狀裂紋；小枝粗壯而圓形，褐色或暗褐色，無毛，具顯著之圓形或卵形皮孔；冬芽爲長二至三公分半之長圓錐形，鱗片三枚，褐綠色，披針形或長圓披針形，回旋狀，與芽等長而包被其外，外面有黃色鱗斑及稀疏之絨毛，內面除中部微有絨毛外餘皆無毛。葉爲奇數羽狀複葉，具七至十三小葉，連同葉柄共長二十至三十五公分，兩側小葉對生或近於對生，愈近葉柄基之小葉形愈小，長圓形或披針狀長圓形，長七至十五公分，寬二公分半至四公分，先端漸尖，基部斜圓形，具短小葉柄或無柄，頂生小葉爲卵形或卵狀長圓形，長十至十二公分，寬五至六公分，先端漸尖，基部漸尖或廣楔形，生於長一公分二至二公分之小葉柄上，小葉邊緣皆具密接而尖銳之鋸齒，葉表面深綠色，除脈上微有毛外餘皆光滑，葉背面深綠色，初被茸毛及濃密之小鱗斑，以後葉漸長大除中脈及側脈上有黃色絨毛外，餘皆光滑，中脈在葉表面微凹，在葉背則突起，側脈二十至二十五對，在葉表面不顯明，在葉背面則突出，葉軸圓形，被黃色絨毛；葉柄長五至六公分，上面微有溝或扁平，下面圓形，基部膨大，被淡黃色絨毛。大小蕊花同株，小蕊花近於無梗，着生於長十八公分而下垂之葇荑花序上，苞片卵形，表面密被粗毛，小蕊十五本，花藥卵形，不具花絲；大蕊花着生於長二十公分而直立之葇荑花序上，具長六公分之花梗，花外具甚發育不全之長形苞片，表面被絨毛，發育良好之苞片成鑽形，花被長一公分半，先端微裂，子房下位，花柱長三至四公厘，被粗毛，先端成羽狀。果爲無柄之堅果，具宿存之花柱，及二枚長一公分半至二公分與寬二公分至二公分半之卵圓形之翅，着生於長達四十五公分被稀疏腺毛之葇荑果序上；種子黃色，光亮。

此種產於峨眉山之九老洞，華嚴頂及大乘寺，海拔一千八百公尺至二千四百公尺左右之森林中。五月開花，八月果可成熟。

此樹極美觀，冬芽大形且具三大鱗片，羽狀複葉具七至十三小葉生於被絨毛之總葉軸上，果有二圓形如勳章之翅，其直徑約二公分，故易識別。此種爲威爾遜氏首先發現於峨邊縣之瓦山，近年已於峨眉山發現，惟甚稀少。其分佈僅限於四川，湖北西部及雲南之東北部。此種之命名，係因其圓形之翅，狀似勳章，故名勳章楓楊。

圖解：1. 着葉與果之枝（原大）；2. 着花與嫩葉之枝（原大）；3. 大蕊花序，花已開過（原大）；4. 大蕊花（放大五倍）；5. 小蕊花（放大五倍）；6. 冬芽之鱗片（放大二倍）。



145. *Pterocarya insignis* Rehder et Wilson

Plate 146.

PTEROCARYA STENOPTERA C. De Candolle.

Juglandaceae.

Pterocarya stenoptera, C. De Candolle in Ann. Sci. Nat. ser. 4, XVIII (1862), 34; Prodr. XVI, pt. 2, (1864), 140.- Hance in Journ. Bot. XI (1873), 376.- Maximowicz in Bull. Acad. Sci. St.-Petersb. ser. 3, XVIII (1873), 64; Mel. Biol. VIII (1873), 639.- Lavallee, Icon. Arb. Segrez. (1885), 65, t. 19.- Skan in Journ. Linn. Soc. Bot. XXVI (1899), 494.- Pritzel ex Diels in Engler, Bot. Jahrb. XXIX (1900), 274.- Gilg in Engler, Bot. Jahrb. XXXIV, beibl. LXXV (1904), 28.- Diels in Engler, Bot. Jahrb. XXXVI, beibl. LXXXII (1905), 33.- Dunn et Tutcher in Kew Bull. Misc. Inform. add. s. X (1912), 250 (Fl. Kwangtung & Hongk.).- Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 181.- Hers in Journ. N. China Branch. R. As. Soc. LIII (1922), 114.- Rehder in Journ. Arn. Arb. IV (1923), 146.- Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 55.

Pterocarya laevigata Hort. ex Lavallee, Icon. Arb. Segrez. (1885), 65 (pro synon.).

Pterocarya chinensis Hort. ex Lavallee, Icon. Arb. Segrez. (1885), 65 (pro synon.).

Pterocarya japonica Hort. apud Dippel, Handb. Laubholzk. II (1892), 329, fig. 161.

Pterocarya stenoptera var. *typica* Franchet in Journ. de Bot. XII (1898), 317.- Pampanini in Nuov. Giorn. Bot. Ital. n.s. XVII (1898), 318.- Loesener in Bot. Centralbl. Beih. XXXVII. abt. II (1919), 107 (Prodr. Fl. Tsingtauen).

Tree 15, rarely up to 25, metres high, 1-2 metres in diameter; bark brownish to dark grey, deeply furrowed; branchlets terete, green or greenish-grey, at first sparsely pilose, then glabrescent, with conspicuous ovate lenticels, pith lamellate; winter-buds long-stalked, naked. Leaves alternate, odd-pinnate, 20-40 cm. long, rhachis more or less winged and the largest wing usually serrate, leaflets 11-25, sessile, opposite or those on the lower part of rhachis opposite and those from the upper part of rhachis subopposite or alternate, ovate-oblong or narrow-oblong, 6-8 cm. long, 2 cm. broad, acute or obtuse at the apex, subrotund or obliquely obtuse rarely obliquely cuneate at the base, serrulate on the margin, upper surface deep green, glabrous, lower surface pale green, punctate, glabrous except slightly pubescent along the veins, midrib flat above, prominent below, lateral veins 13-15 pairs, obsolete above, conspicuous below; petioles 3-5 cm. long, enlarged at base, slightly pubescent. Flowers monoecious, in pendulous catkins, staminate catkins from the branchlets of last year, 6-10 cm. long, staminate flowers with an elongated ovate bract adnate with two bractlets, perianth entire or two-lobed, stamens 6 or more, anthers yellow, ellipsoid, sessile or with very short filaments, pistillate cathins 5 cm. long, from the upper part of branchlet, pistillate flowers solitary, in the axil of yellow-pubescent ovate bract and with two lateral lanceolate bractlets at its base, perianth tubular at base and adnate to ovary, 4-lobed above the middle, style short, divided into two purple stigmas, ovary 1-celled, 1-ovuled. Fruit a nutlet with two oblong wings 1.8-2 cm. long, in a fruiting raceme about 30 cm. long.

MOUNT OMEI: near Wan-hsing-chuang, alt. 470 m., at roadside, *H. C. Chow*, No. *9514*, in 1938; same locality, tree 15 meteres high, both staminate and pistillate flowers green, *W. P. Fang*, No. *13933*, March 23, 1940; same locality, *C. L. Chow*, No. *5535*, March 15, 1942; same locality, *W. P. Fang*, No. *14962*, May 10, 1940; Pao-kuo-ssu, alt. 480 m., tree 12 metres high, staminate flowers and pistillate flowers greenish with 2-lobed rubby stigmas, *W. P. Fang*, No. *13994*, March 19, 1940; Fu-hu-ssu, side of ravines, tree 18 metres high, *S. S. Chien*, No. *5458*, May 4, 1936; same locality, tree 15 metres high, staminate flowers greenish in pendulous catkins, appearing before leaves, *W. P. Fang*, No. *13900*, March 9, 1940.

Distribution: Shantung, Shensi, Kansu, Kiangsu, Chekiang, Kiangsi, Hupeh, Szechuan, Sikang, Kweichow, Yunnan, Fukien, Kwangtung, Kwangsi.

This species is fairly common at the base of Mount Omei, especially at side of streams and in ravines. It may be cultivated as high-way-side tree...W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a pistillate flower (enlarged 20 times); 4, staminate flowers (enlarged 10 times); 5, a fruit (enlarged 1.5 times).

圖版一百四十六

楓　楊　別名：麻柳，溪楊，元寶楓。

胡桃科

喬木高十五公尺，稀達二十公尺，直徑一至二公尺；樹皮淡褐色或暗灰色，深縱裂；小枝圓形，綠色或綠灰色，初被稀疏之絲狀毛，旋卽脫落，具顯明之卵形皮孔，髓空心，片狀；冬芽裸露而具長柄。葉互生，奇數羽狀複葉，長二十至四十公分，總軸具翅，且最大之翅常有鋸齒，小葉十一至二十五枚，無柄，對生或在總柄下部者爲對生，在上部者近於對生或互生，卵狀長圓形或狹長圓形，長六至八公分，寬二公分，先端銳尖或鈍形，基部亞圓或斜鈍形，稀爲斜楔形，葉緣具鋸齒，葉表面深綠色，無毛，背面蒼綠色，具腺點，除沿脈微被絨毛外，餘皆無毛，中脈在葉表面扁平，在葉背面則突出，側脈十三至十五對，在葉表面不顯露，在葉背則顯明；葉柄長三至五公分，基部膨大，微被絨毛。大小花蕊同株，着生於下垂之柔荑花序上，小蕊花序由前年小枝上發出，長六至十公分，小蕊花具一長卵形之大苞片與二合生之小苞片，花被完整或二裂，小蕊六本或更多，花藥黃色，橢圓形，無花絲或花絲極短；大蕊花序長五公分，由小枝上部發出，大蕊花單生於被黃色絨毛之卵形苞片之腋間，基部有二側生披針形之小苞片；花被基部管狀而與子房合生，中部以上成四裂，花柱短，裂爲二紫色柱頭，子房一室，一胚珠。果爲小堅果，具二長圓形之翅長一公分半至二公分，着生於長約三十公分之總狀果序上。

此種產於峨眉山山麓之萬行莊，報國寺及伏虎寺，海拔四百至七百公尺之溪旁及路側。三月開花，七月果可成熟。

此種分佈於山東，陝西，甘肅，江蘇，浙江，江西，湖北，四川，西康，貴州，雲南，福建，廣東及廣西等省。

此種在各省均極習見，可大量栽培，作爲行道樹。

圖解：1. 花枝（原大）；2. 果枝（原大）；3. 大蕊花（放大二十倍）；4. 小蕊花（放大十倍）；5. 果實（放大倍半）。



146. *Pterocarya stenoptera* C. De Candolle

Plate 147.

ENGELHARDTIA CHRYSOLEPIS Hance.

Juglandaceae.

Engelhardtia chrysolepis Hance in Ann. Sci. Nat. Ser. 4, XV (1861), 227; in Journ. Linn. Soc. Bot. XIII (1873), 124.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 186.— Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 1 (1929), 56.

Engelhardtia Wallichiana Lindley in Wallich, Cat. No. 4942 (1830) (nomen nudum).— C. De Candolle, Prodr. XVI, pt. 2 (1864), 141.— J.D. Hooker in Hooker, f. Fl. Brit. India, V (1888), 596.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 498.— Dunn et Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 251 (Fl. Kwangtung & Hongkong).

Engelhardtia pterococca Roxburgh, Fl. Ind. III (1832), 531 (pro parte).

Engelhardtia Wallichiana Lindley var. *chrysolepis* C. De Candolle, Prodr. XVI. pt. 2 (1864), 142.— Skan in Journ. Linn. Soc. Bot. XXVI (1899), 495.

Evergreen small tree 8 metres, rarely up to 15 metres, high; bark brown or yellowish-brown, smooth; branchlets slender, terete, glabrous, those of the current-year sparsely glandular, pith solid. Winter-buds axillary, ovoid or elongated, with 2 ovate scales yellow-glandular outside. Leaves coriaceous, 16-20 cm. long, pinnate, with 4-8 leaflets ovate-oblong or obovate-oblong, 6-10 cm. long, 2-3 cm. broad, shortly acuminate on the apex, obliquely cuneate or obliquely broad-cuneate at the base, entire and slightly revolute on the margin, upper surface deep green, glabrous or sparsely glandular, lower surface pale green or yellowish-green, densely yellow glandular, midrib conspicuous above, prominent below, primary veins 15-18 pairs obsolete above, slightly conspicuous below; rhachis terete, 3-6 cm. long, sparsely glandular, on stout petioles 2.5-3.5 cm. long, petiolules 5-7 mm. long, slightly grooved above, rounded below. Flowers minute, monoecious; staminate flowers in erect branched catkins, perianth usually consisting of 4 glandular scale-like lobes, stamens 8-12, subsessile, inserted on and included in the Perianth-lobes, anthers minute; pistillate flowers on pedicels 3 mm. long, solitary on a pendulous glandular catkin, 16-20 cm. long, bracts 3-lobed, densely golden-yellow glandular, perianth thick, obovate, glandular, 3-lobed, adnate to the inferior ovary, stigmas 4, sessile. Fruit a glandular globose nutlet crowned with the 4-lobed perianth, adnate to the base of scarious 3-lobed reticulately nerved bract, lobes oblanceolate, the middle lobe is the longest, 4.5 cm. in length, lateral lobes 1.5-2.8 cm. long; pedicels slender, glandular, 5 mm. long, in a pendulous fruiting spike 18-20 cm. long.

MOUNT OMEI: Pao-ning-ssu, alt. 450 m., tree 8 metres high, *T. C. Lee*, No. *3526*, September 22, 1940; same locality, *T. C. Lee*, Nos. *4539* & *4781*, October 1940; same locality, tree 14 metres high, flowers yellow, *C. L. Chow*, No. 6224, June 4, 1942; Pao-kuo-ssu, alt. 500 m., tree 12 metres high, flowers yellow, *C. L. Chow*, No. *6096*, May 12, 1942; Erh-ping, alt. 600 m., small tree 12 metres high, *W. P. Fang*, No. *17452*, June 28, 1944; same locality, tree 14 metres high, *C. L. Chow*, No. *6288*, June 22, 1942; Liang-fong-kang, tree 7 metres high, young fruits yellow, *T. C. Lee*, *3323*, August 14, 1940; same locality, tree 15 metres high, flowers yellow, *C. L. Chow*, No. *6314*, June 23, 1942; Hei-lung-kiang, alt. 900 m., at roadside, small tree 10 metres high, flowers yellow, rare, *T. C. Lee*, No. *2690*, July 7, 1940; Pao-chang-fong, in woods, tree 8 metres high, pistillate flowers yellow, *T. C. Lee*, No. *3173*, August, 3, 1940; without precise locality, *T. H. Tu*, No. *975*, in 1935; without precise locality, *S. N. Hsu*, No. *576*, in 1938; without precise locality, *C. W. Yao*, No. *5032*, in 1939.

Distribution: Szechuan, Sikang, Hunan, Kweichow, Yunnan, Kwangtung, Kwangsi; Singapore, Penang.

We have found this species fairly common at the foot of Mount Omei. The species is near *Engelhardtia Colebroodiana* Lindley, but it differs easily by the glandular leaves not tomentose at the lower surface and by the glandular catkins as well as glandular fruits which are neither hispid nor hirsute .... W. P. Fang.

Fig. 1, a fruiting and leafy branch (natural size); 2, a flowering and leafy branch (natural size); 3, a pistillate flower (enlarged 5 times); 4, a staminate flower (enlarged 5 times); 5, a young fruiting inflorescence (natural size).

圖版一百四十七

黃杞

胡桃科

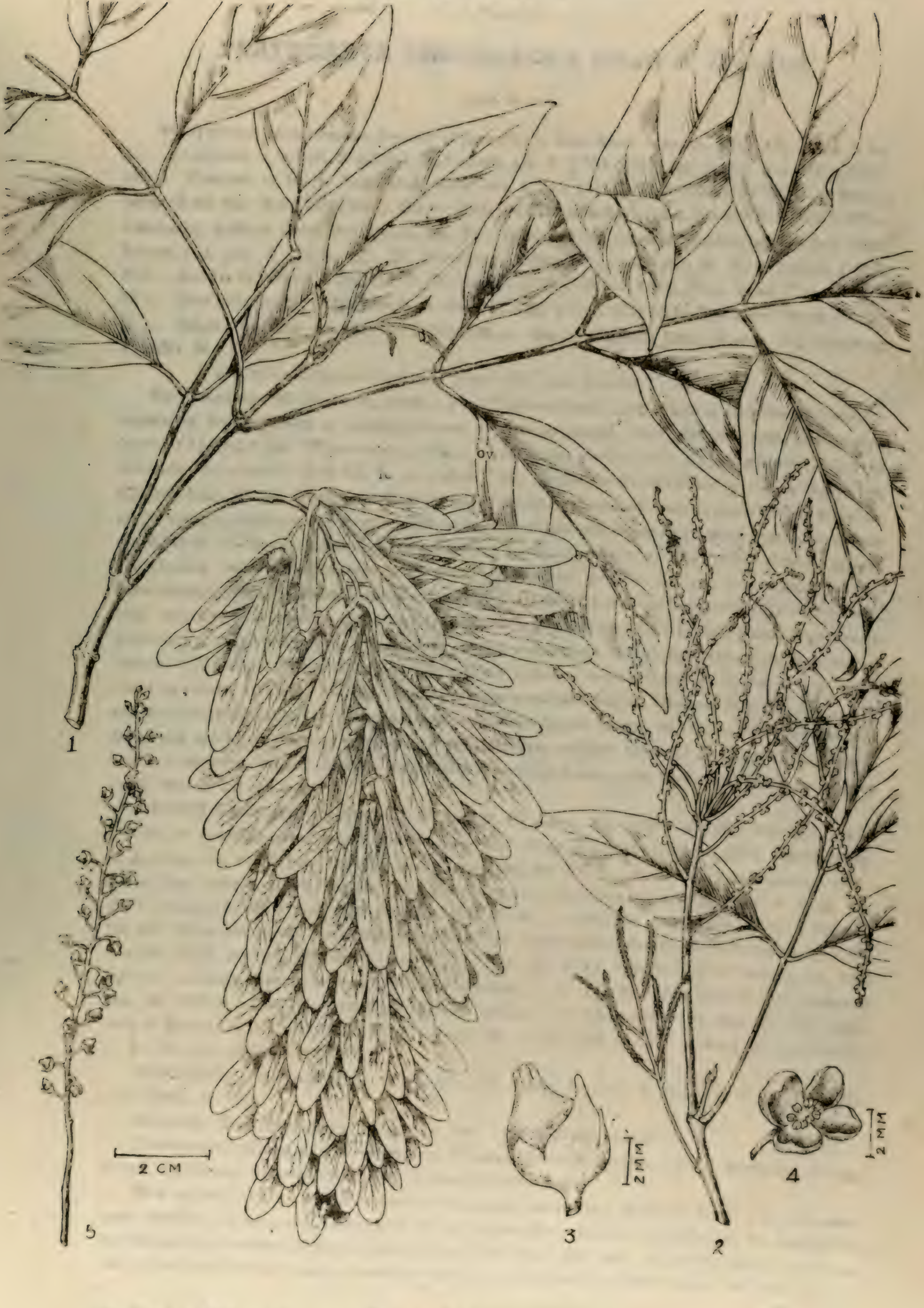
常綠小喬木高八公尺，稀達十五公尺；樹皮褐色或黃褐色，平滑；小枝細圓而無毛，當年生枝被稀疏之腺毛，髓心堅實。冬芽腋生，卵圓形或長圓形，具二卵形鱗片，表面被黃色腺毛。葉革質，長十五至二十公分，羽狀，具四至八小葉，小葉卵狀長圓形或倒卵狀長圓形，長六至十公分，寬二至三公分，先端短尖，基部斜楔形或斜廣楔形，全緣且微反捲，葉表面深綠色，無毛或被稀疏之腺毛，背面淺綠色或黃綠色，被濃密之黃色腺毛，中肋在葉表面顯明，在葉背面則突出，側脈十五至十八對，在葉表面不顯露，在葉背面微顯明；總葉軸圓形，長三至五公分，被稀疏之腺毛，着生於長二公分半至三公分半之粗壯葉柄上，小葉柄長五至七公厘，上面微有溝，下面圓形。花小，大小蕊花同株；小蕊花成直立分枝之葇荑花序，花被常由四被鱗體之鱗片形裂片所組成，小蕊八至十二本，具短花絲，着生於花被裂片之內，花藥極小；大蕊花生於長三公厘之花梗上，單生於下垂被腺毛之葇荑花序上，長十五至二十公分，苞片三裂，外被濃密之金黃色腺毛，花被甚厚，倒卵形，具腺毛，三裂，與下位子房合生，柱頭四，無柄。果爲被腺毛之圓球形小堅果，先端具宿存而四裂之花被，基部與具網脈成三裂之薄膜質苞片合生，苞片倒披針形，中央苞片極長，長四公分半，兩側苞片長二公分半至二公分八公厘；果梗細而具腺毛，長五公厘，着生於長十八至二十公分而下垂之穗狀果序上。

此種產於峨眉山之保寧寺，報國寺，二坪，涼風崗，黑龍江及寶掌峯等處，海拔四百餘公尺至一千四百公尺之路旁或森林中。五月開花，九十月果可成熟。

此種分佈於四川，西康，湖南，貴州，雲南，廣東，廣西，新加坡及檳榔嶼等處。

此種在峨眉山山麓最普通，與短翅黃杞極相近，所不同者，在其葉背面有腺狀毛而無絨毛，葇荑花序及果皆被腺毛，但絕無刺毛或粗毛。

圖解：1. 着果及葉之枝（原大）；2. 着花及葉之枝（原大）；3. 小蕊花（放大五倍）；4. 大蕊花（放大五倍）；5. 幼嫩果序（原大）。



147. *Engelhardtia chrysolepis* Hance

Plate 148.

PLATYCARYA STROBILACEA Siebold et Zuccarini.

Juglandaceae.

Platycarya strobilacea Siebold et Zuccarini in Abh. Akad. Muench. III (1843), 742, t. 5, fig. 1.— Maximowicz in Bull. Acad. Sci. St.-Petersb. ser. 3, XVIII (1873), 64: in Mel. Biol. VIII (1873), 640.— Franchet in Nouv. Arch. Mus. Paris. ser. 2, VII (1884), 92 (Pl. David. 1. 282).— Skan in Journ. Linn. Soc. Bot.XXVI (1899), 495.— Pritzel ex Diels in Engler, Bot. Jahrb. XXIX (1900), 273.— Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1900), 31.— Dunn et Tutcher in Kew Bull. Misc. Inform. add, ser. X (1912), 251 (Fl. Kwangtung & Hongk.).— Leveille, Fl. Kouy-Tcheou, (1914), 203.— Rehder et Wilson in Sargent, Pl. Wilson. III (1916), 180.— Chun, Chin. Econ. Trees (1921), 67.— Hers in Journ. N. China Branch. R. As. Soc. LIII (1922), 113; Liste Ess. Lign. Honan (1922), 21.— Rehder in Journ. Arn. Arb. IV (1923), 146.— Handel-Mazzetti, Symb. Sincae, VII, Lieferung 1 (1929), 56.

Fortunaea chinensis Lindley in Jonrn. Hort. Soc. London, I (1846), 150.

Deciduous tree 10-18 metres, rarely up to 20 metres, high; bark brown or dark brown, smooth; branchlets terete, brown or purplish-brown, at first pubescent, then glabrous, with conspicuous lenticels and solid pith. Winter-buds axillary, ovoid, scales several pairs, obtuse, glabrous. Leaves alternate, odd-pinnate, 15-30 cm. long, leaflets 7-15, sessile, ovate-lanceolate to oblong-lanceolate, 4-12 cm. long, 2-3 cm. broad, acuminate on the apex, obliquely rounded at the base, doubly serrulate on the margin, sparingly pubescent while young, glabrous when matured, deep green above, pale green below, midrib conspicuous above, prominent below, primary veins 17-20 pairs, obsolete above' conspicuous below; rhachis terete, purplish, glabrescent; petioles 4-6 cm. long, dilated at base. Flowers small, without perianth, monoecious; staminate flowers in erect pubescent catkins 6-10 cm. long, usually 8-18 terminal on branchlets but below pistillate catkins, stalk 5 mm. long, bracts lanceolate or ovate-lanceolate, 4 mm. long, usually incurved, whitish-pubescent on both sides, stamens 8-12, sessile, in the axils of bracts, anthers yellow, 2-celled; pistillate flowers in an erect ovoid or oblong catkins, 1.5-2 cm. long, above the staminate catkins, terminal on branchlets, rarely axillary, ovary adnate to the pubescent stiff acuminate bracts, 4 mm. in length, style 2-branched, short and thick, pubescent, occasionally the pistillate catkins terminal by a staminate catkin. Fruits compressed winged nutlets in the axils of purplish-brown, stiff, lanceolate bracts, forming an ovoid strobile 2-3 cm. long.

MOUNT OMEI: Pao-ning-ssu, alt. 450 m., *H. C. Chow*, No. *8682*, October 17, 1938; same locality, at roadside, small tree 5 metres high, *W. P. Fang*, No. *18641*, May 6, 1942; same locality, *C. L. Chow*, No. *6247*, June 11, 1942; Liang-fong-kang, alt. 800 m., small tree 7 metres high, *C. L. Chow*, Nos. *6069* & *6105*. May 25, 1942; King-lung-ssu, small tree 8 metres high, *W. P. Fang*, No. *18907*, August 8, 1940; Hung-chun-ping, alt. 1147 m., *H. C. Chow*, No. *7606*, June 12, 1938; She-tao-tui, alt. 1300 m., in forests, small tree 16 metres high, leaves green, flowers yellowish-green, *W. W. Ma*, No. *2327*, June 14, 1940; same locality, *T. C. Lee*, No. *3131*, August 1, 1940; Ta-ping, alt. 1400 metres, in woods, tree 10 metres high, very common, *T. C. Lee*, No. *2772*, July 12,1940; Hsin-kai-ssu, alt. 1600 m., tree 14 metres high, flowers green, *C. L. Chow*, No. *6166*, May 27, 1942; south-west of Mount Omei, Opien-hsien. *W. C. Cheng*, No. *5978*, June 16,1936; without precise locality, *C. W. Yao*, No. *4858*, in 1939.

SZECHUAN: Nanchuan-hsien, *K. L. Chu*, No. *1671*, in 1935; Kuan-hsien, *S. S. Chien*, No. *5701*, May, 25, 1936.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, Nos. *2556* & *3661*, in 1936.

Distribution: Honan, Shensi, Chekiang, Kiangsu, Anhwei, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Kweichow, Yunnan, Kwangtung. Kwangsi; Corea, Japan.

This species is very common in forests or in ravines at the foot of Mount Omei. It is a monotypic species and is easily recognized by the perianthless flowers in catkins on the apex of the branchlets with a solitary pistillate catkin above the staminate ones and by the winged nutlets in the axils of stiff bracts forming a strobile which has been used as a good material for black dye.

....W. P. Fang.

Fig. 1, a flowering and leafy branch (natural size); 2, a pistillate flower (enlarged 10 times); 3, a staminate flower (enlarged 10 times); 4, a strobile (natural size); 5, a fruit with a bract (enlarged 5 times).

圖版一百四十八

化香樹

胡桃科

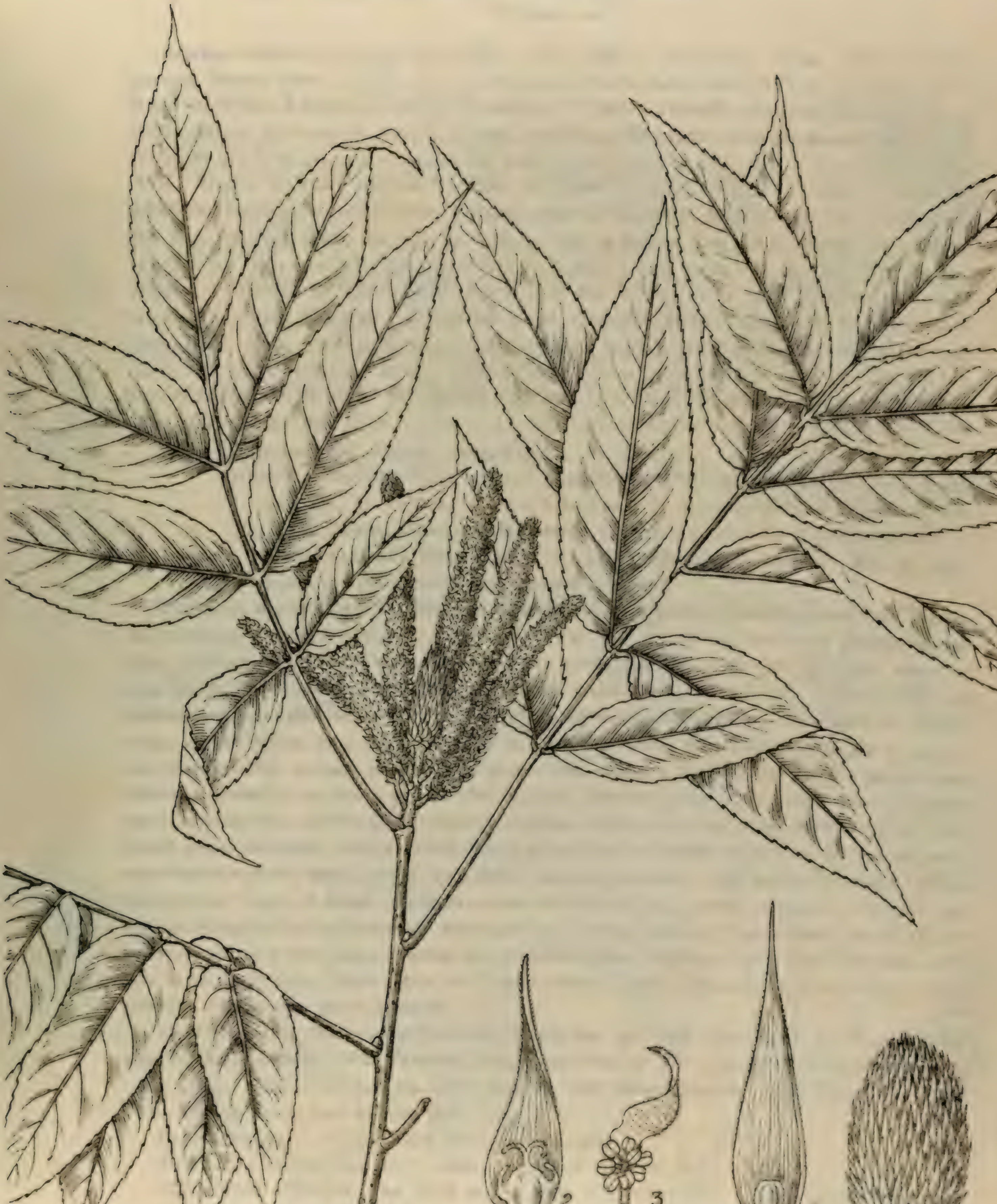
落葉喬木高十至十五公尺，稀達二十公尺；樹皮褐色或暗褐色，平滑；小枝圓筒形，褐色或紫褐色，初被絨毛，旋即脫落，具顯明之皮孔及堅實之髓。冬芽腋生，卵圓形，具鱗片數對，鈍形，無毛。葉互生，奇數羽狀複葉，長十五至三十公分，小葉七至十五枚，均無小葉柄，卵狀披針形至長圓披針形，長四至十二公分，寬二至三公分，先端漸尖，基部斜圓形，葉緣具雙鋸齒，幼嫩時被稀疏之絨毛，成熟時即脫落，葉表面深綠色，背面淺綠色，中肋在葉表面顯明，在葉背則突出，側脈十七至二十對，在葉表面不顯露，在葉背面則顯著；葉軸圓形，紫色，光滑；葉柄長四至六公分，基部膨大。花小，無花被，大小蕊花同株；小蕊花生於長六至十公分直立而被絨毛之葇荑花序上，常爲八至十八花序頂生於小枝之先端，但在大蕊花序莖之下，花梗長五公厘，苞片披針形或卵狀披針形，長四公厘，常向內反捲，內外兩面皆被淡白色絨毛，小蕊八至十二本，無花絲，着生於苞片之腋間，花藥黃色，二室；大蕊花生於直立卵圓形或長圓形之葇荑花序上，長一公分半至二公分，生於小枝先端而位於小蕊花序之上，稀爲腋生，子房與被毛而堅韌之漸尖形苞片合生，長四公厘，花柱分爲二枝，短而寬，被絨毛，偶亦有小蕊葇荑花序位在大蕊葇荑花序之上者。果爲左右扁平且具翅之小堅果，生於紫褐色披針形且密集而堅韌苞片之腋間，全果序形成長二至三公分之卵圓形球果狀。

此種產於峨眉山之報國寺，凉風崗，金龍寺，洪椿坪，蛇倒退，大坪，新開寺及息心所等處，海拔四百餘公尺至一千四百公尺之森林中。五月開花，十月果可成熟。

此種分佈於河南，陝西，江蘇，浙江，安徽，江西，湖北，四川，西康，湖南，貴州，雲南，廣東，廣西等省以及朝鮮，日本。

此種在峨眉山之山麓一帶極爲習見。此種爲一單種屬植物，極易辨別，因其生於小枝先端之無花被之花所成之葇荑花序，暨單生之大蕊葇荑花序位於叢生之小蕊花葇荑花序之上，且生於披針形堅韌苞片腋間之小堅果密集成一果叢，此果叢已用爲黑色染料之絕好材料。

圖解；1. 着花與葉之枝（原大）； 2.大蕊花（放大十倍）； 3.小蕊花（放大十倍）；4. 球果（原大）；5. 小堅果及一苞片（放大五倍）。



148. *Platycarya strobilacea* Siebold et Zuccarini

Plate 149.

GINKGO BILOBA Linnaeus.

Ginkgoaceae.

Ginkgo biloba Linnaeus, Mant. Alt. (1771), 313.— Thunberg, Fl. Jap. (1784), 358.— Lamarck, Encycl. Meth. II (1786), 712.— Parlatore in De Candolle, Prodr. XVI. pt. II (1868), 507.— Miquel in Siebold & Zuccarini, Fl. Jap. II (1870), 73, t. 136.— Franchet & Savatier, Enum. Pl. Jap. I (1875), 474.— Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 110 (Fl. Shangh. 58); XXXII (1879), 65 (Fl. Tien-tsin, 43).— Masters in Journ. Linn. Soc. Bot. XVIII (1881), 500; XXVI (1902), 148.— Sargent in Garden & Forest, VI (1893), 473; Forest Fl. Jap. (1894), 75.— Faber in Denkschr. Entwickel. Kiautschou, (1898), 27.— Pritzel in Engler, Bot. Jahrb. XXIX (1900), 213.— Shirasawa, con. Ess. For. Jap. I (1900), 10, t. 8, fig. 1-14.— Gilg in Engler, Bot. Jahrb. XXXIV, beibl. LXXV (1904), 15.— Meyer in U.S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIII (1908), 25. No. 10000.— Pampanini in Nuov. Giorn. Bot Ital. n. Ser. XVIII (1911), 15.— Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 1.—Loesener in Bot. Centralbl. Beibl. XXXVII, abt. II (1919), 63.— Chun, Chin. Econ. Trees (1921), 1, pl. t. 2.— Hers in Journ. N. China Branch. R. As. Soc. LIII (1922), 111; Liste Ess. Lign. Honan, (1922), 14.— Rehder in Journ. Arn. Arb. IV (1923), 117.— Handel-Mazzetti, Symb. Sin, VII, Lieferung I (1929) 1.— Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 592, pl., (5th Edit.).

Ginkgo Kaempfer, Amoen, (1712), 811, t.

Salisburia adiantifolia Smith in Trans. Linn Soc. III (1797), 330.— Bunge in Mem. Acad. Sav. Etr. St. Petersb, II (1833), 136 (Enum. Pl. Chin. Bor. 62).— Maximowicz in Mem. Div. Sav. Acad. Sci. St. Petersb. IX (1859), 477 (Ind. Fl. Pekin.).—Siebold & Zuccarini in Abh. Akad. Munch. IV. pt. III (1846), 233 (Fl. Jap. Fam. Nat. II, 109).

Pterophyllus Salisburiensis Nelson, Pinacaae (1866), 163.

Deciduous tree usually 20, rarely up to 40, metres high, forming a pyramidal crown; bark grey or yellowish-grey, fissured, glabrous; branchlets consist of 2 kinds: long branchlets slender, terete, grey, glabrous, horizontally spreading or slightly pendulous; short branchlets spur-like, lateral on long branchlets, with conspicuous leaf-scars. Winter-buds conical, scales brown. Leaves deciduous, alternate and scattered on long branchlets, clustered on short branchlets, fan-shaped or broadly wedge-shaped, 6-8 cm. long, 5-8, rarely to 15 cm. broad, entire or wavy-margined usually cleft into two lobes, parallel veined, at first light green, then changed to deep green in the summer and yellowish green in the autumn; petiole 3-6 cm. long, slender, glabrous, without stipules. Flowers small, inconspicuou, unisexual, dioecious, developing with the unfolding of the leaves from the short lateral spurs; staminate flowers usually 2 on a peduncle and in pendulous catkins, without perianth, each stamen with two anthers on a short stalk, pollen-grains with spiral marks; pistillate flowers consisting of a pair of naked ovules on a stout stalk 2-3 cm. long, mostly one ovule developed into fruit and after fertilization becoming enveloped in a fleshy covering. Fruit an ovoid drupe, about 3 cm. long, orange-yellow when matured, with glaucous bloom, solitary or very rarely in pairs; skin thin, flesh soft, acrid, seeds white or cream-coloured, edible, covered by a angled thin shell; peduncle 3-4 cm. long, stout, glabrous.

MOUNT OMEI: Pao-kuo-ssu, Fu-hu-ssu, Huang-wan and Wan-nien-ssu, *W. P. Fang*, without number, April to May, 1940; Ta-o-ssu, Lung-hseng-kang, at side of forests, tree 20 metres high, fruits green, ovoid, *T. C. Lee*, No. *3037*, July 29, 1940; Hung-chun-ping. *H. C. Chow*, Nos. *7546*, *9476*, *9508* & *9511*, April to June, 1938.

Hopei: Peiping, *T. N. Liou*, No. *7431*, April 19, 1930.

KIANGSU: Pao-hua-shan, *W. C. Cheng*, No. *5904*, April 12, 1935.

SZECHUAN: Chengtu, tree 10-12 metres high, *S. S. Chien*, No, *5175*, April 10, 1938; same locality, cultivated in the University, tree 20 metres high, young fruits green, *W. P. Fang*, No. *13421*, March 6, 1939.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. *2379*, April 1936.

Distribution: Manchuria, Hopei, Shantung, Kiangsu, Chekiang Anhwei, Kiangsi, Hupeh, Hunan, Szechuan, Sikang, Kweichow, Yunnan; Japan.

This tree has been found not uncommon at the foot and lower slopes of Mount Omei and other districts of Szechuan province, usually cultivated either near temples or at the side of houses. On account of its brownish, straight small grained wood, it has been used to make book-shelves and other fancy furniture .... W. P. Fang.

Fig. 1, a staminate flowering shoot (natural size); 2, a pistillate flowering shoot (natural size); 3, a long leafy shoot (natural size); 4, pistillate flowers (enlarged 4 times); 5, a stamen (enlarged 10 times); 6, a pollen-grain showing the spiral mark (enlarged 1,800 times); 7, a fruit (natural size); 8, a dissection of fruit (natural size); 9, a seed (natural size).

圖版一百四十九

銀杏　別名：公孫樹，白果樹。

銀杏科

落葉喬木常高二十公尺，稀達四十公尺，樹冠尖塔形；樹皮灰色或黃灰色，縱裂，無毛；枝分長短兩種；長枝細圓，灰色，無毛，平斜向伸展或略下垂；短枝距形，生於長枝之側，具顯著之葉疤。冬芽圓錐形，鱗片褐色。葉冬季凋落，在長枝上稀疏而互生，在短枝上叢生，扇形或闊楔形，長六至八公分，寬五至八公分，稀達十五公分，邊緣完整或成波狀，常自其中央分爲裂片，具平行葉脈，初爲淡綠色，俟夏季變爲深綠色，至冬季則變爲黃綠色；葉柄長三至六公分，纖細，無毛，不具托葉。花小，不顯著，單性，大小蕊花異株，着生於短枝上，與葉同時開放；小蕊花着生於下垂之葇荑花序，每花梗均具二花，無花被，每小蕊具二花藥生於短柄上，花粉粒具螺旋狀花紋；大蕊花常僅兩枚裸露之胚珠，着生於長二至三公分之粗壯短梗上，胚珠均可發育爲種子，並在受粉以後常養育一肉質厚殼，包圍於其外。果爲卵圓形核果，長三公分，成熟時褐黃色，被白粉，單生或稀雙生；內殼薄而堅硬，外殼肉質，辛味並有臭氣，種子白色或乳白色，被有稜之薄殼所包圍；果梗長三至四公分，粗壯，無毛。

此種產於峨眉山之報國寺，伏虎寺，黃灣，龍昇崗，萬年寺及洪椿坪等處之路旁或寺廟旁邊。四五月開花，八月果可成熟。

此種分佈於東三省，河北，山東，江蘇，浙江，安徽，江西，湖北，湖南，四川，西康，貴州，雲南；日本。

此種在峨眉山麓及四川各縣均極習見，常栽培於寺廟及住宅旁邊。因其木材褐色細紋，常用以製書架及其珍貴器具。

圖解：1.小蕊花枝（原大）；2.大蕊花枝（原大）；3.葉枝（原大）；4.大蕊花（放大四倍）；5.小蕊（放大十倍）；6.花粉粒示其螺旋狀花紋（放大一千五百倍）；7.果實（原大）；8.果之解剖（原大）；9.種子（原大）。



149 *Ginkgo biloba Linnaeus*

Plate 150.

CATALPA OVATA G. Don.

Bignoniaceae.

Catalpa ovata G. Don, Gen. Syst. IV (1837) 230.— Lavalee, Icon. Arb. Segrez. (1880), 33, t. 10.— Rehder in Sargent, Pl. Wilson. I (1913), 303.— Handel-mazzetti, Symb. Sin, VII. Lieferung 4 (1936). 889.

Bignonia Catalpa Thunberg (non Linnaeus), Fl. Jap. (1684), 251.

Catalpa bignonioides, B? *Kaempferi*, De Candolle, IX (1845), 226.

Catalpa Kaempferi, Siebold & Zuccarini in Abh. Acad. Muench, IV. 3 (1846), 142 (Fl. Jap. Fam. Nat. II. 18).— Lemaire in Ill. Hort. IX (1862), t. 319.— Hooker f. in Bot. Mag. CVIII (1882), t. 6611.

Catalpa Henryi, Dode in Bull. Soc. Dendr. France (1907), 199. fig. D. E.

Tree usually 10, rarely up to 15, metres high, bark grey or yellowish grey, smooth; branchlets stout. widely spreading, those of the current year green, sparingly hirsute, those of more than one year old grey or yellowish grey, glabrescent, with conspicuous lenticels and large conspicuous leaf-scars; winter-buds axillary with several pairs of outer scales. Leaves subopposite or subverticillate, chartaceous, broadly ovate or ovate, 10-25 cm. long, 7-18 cm broad, acuminate or abruptly acuminate on the apex, subcordate or subrotund at base, entire or shallowly 3-5-lobed on the margin, upper surface deep green, puberulous while young and with tufts of yellow hairs at the axils of veins, lower surface pale green, pubescent on the veins and veinlets, nerves prominent below, with 4 purple glandular spots at the axils of nerves; petioles 12-20 cm. long, cylindric, dilated at base, green, sparingly hirsute. Flowers fragrant, in terminal panicles 12-18 cm. long, sparingly hirsute; calyx campanulate, 7 mm. long, green, glabrous, deeply 2-lobed, lobes ovate or obovate, 5 mm. long, abruptly acuminate; corolla campanulate, 12-20 mm. long, 7 mm. in diameter, yellowish or yellowish-white, purple spotted inside, 2-lipped, upper lip 2-lobed, lower lip 3-lobed, with 2 orange nectary bands; stamens 2, inserted at the base of corolla and included in the corolla, anthers versatile. linear, yellow, 2-celled; ovary superior, cylindric, glabrous, style as long as the stamens, glabrous, stigma slightly 2-lobed. Fruits cylindric capsules, 30-28 cm. long, seeds oblong with a tuft of long white hairs at each side.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, *W. C. Cheng*, No. *5964*, May 1936.

SZECHUAN: Chengtu, on the campus of National Szechuan University, cultivated tree 7 metres high, flowers yellowish with purple spots inside the corolla, *W. P. Fang*, No. *19263*, May 15, 1943.

Distribution: Shantung, Hupeh, Szechuan, Kweichow, Yunnan.

This species is easily recognized by its small yellowish flowers and its large, usually glabrescent, leaves. It has been commonly cultivated on the Chengtu plain, but is rare in the wild state on Mount Omei and its vicinity .... W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a flower (enlarged 2 times); 3, a flower without corolla and stamems to show the pistil and calyx (enlarged 3 times); 4, the corolla dissected to show the stamens (enlarged 2 times); 5, a stamen (enlarged 3 times); 6, a portion of leaf to show the hairs on the lower surface (enlarged 20 times); 7, a portion of leaf to show hairs on the upper surface (enlarged 20 times); 8, a fruit (natural size); 9, a seed (enlarged 3 times).

圖版一百五十

梓樹

紫葳科

喬木高十公尺，稀達十五公尺，樹皮灰色或黃灰色，平滑；枝粗壯，伸展極寬，當年生之枝綠色，疎被絨毛，多年生之枝灰色或黃灰色，無毛，具顯著之皮孔及大形之葉疤；冬芽腋生，具鱗片數對。葉近於對生或輪生，紙質，闊卵形或卵形，長十至二十五公分，寬七至十八公分，先端漸尖或突然漸尖，基部亞心臟形或亞圓形，全緣或三至五淺裂，表面深綠色，幼嫩時被柔毛並於葉脈之腋具叢之生柔毛，背面淡綠色，葉脈上被絨毛，主脈在葉背面突出，在脈腋具四紫色腺點；葉柄長十二至二十公分，圓柱形，基部膨大，綠色，疎被絨毛。花具芬香，生於頂生之圓錐花序上，長十二至十八公分，疎被絨毛；花萼鐘形，長七公厘，綠色，無毛，二裂甚深，裂片卵形或倒卵形，長五公厘，突然漸尖，花冠鐘形，長十二至二十公厘，直徑七公厘，淡黃色或黃白色，裏面具紫色斑點，先端裂爲二唇形花之瓣，上唇二裂，下唇三裂，具二褐色之蜜腺帶，小蕊二本着生於花冠基部且全包藏於花冠之內，花藥綫形，與花絲相交成丁字形，黃色，二室；子房上位，圓柱形，無毛，花柱與小蕊等長，無毛，柱頭微二裂。果爲圓柱形蒴果，長三十至三十五公分，種子長圓形，兩端具叢生之白色長毛。

此種產於峨眉山西南之峨邊縣。

此種分佈於山東，湖北，四川，貴州及雲南等省。

此種具黃色小花及近於無毛之大葉，故易於辨別。在成都平原已普遍栽培，但在峨眉山及其附近則野生者甚稀少。

圖解：1.花枝（原大）；2.花（放大二倍）；3.一花折去其花冠及小蕊以示其大蕊及花萼（放大三倍）；4.花冠解剖以示小蕊（放大二倍）；5.小蕊（放大三倍）；6.葉背面之一部以示其毛（放大二十倍）；7.葉表面之一部以示其毛（放大二十倍）；8. 果（原大）；9.種子（放大三倍）。



150. *Catalpa ovata* G. Don.

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ICONES PLANTARUM OMEIENSIUN

Edited by **Wen-pei Fang**, *Ph.D.*,

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